The Journal of the American Medical Profession

MEDICAL TIMES

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Diagnosis in Rectal Bleeding
Peptic Ulcer • "Stump Cancer"
Rheumatism Research in Britain
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Vol. 76 January 1948 No. 1

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EDITORIALS

The Dublin Rotunda

The opening of the first Dublin Lying-in Hospital by the obstetrician Bartholomew Mosse took place on March 15, 1745. The land for the later hospital was leased in 1748, the foundation stone laid in 1751, and the wards opened by Mosse on December 8, 1757. These were the origins of the famous Dublin Rotunda, whose two-hundredth anniversary has just been celebrated.

The founding of this great center of obstetric progress was made possible by Mosse's financial acumen. He resorted to lotteries to meet his deficits. This not only enabled him to carry the original venture to success but also made possible the growth of the early hospital into the larger buildings of 1757. *The prize-winners in these lotteries returned their winnings to the Hospital Committee.*

What part have the Irish Sweepstakes of today played in the further history of the Rotunda? The Irish Hospital Sweepstake Commission, in 1933, offered financial assistance to the Rotunda, whose master at that time was Bethel Solomons. This offer was accepted by the Board of Governors.

Under the mastership of Andrew Hope Davidson in 1939-1940 we note in his report on the various improvements and additions for that period that they were made possible by the 160,000 pounds allocated by the Commissioners of the Irish Hospitals Sweepstakes, "who also provided for the cleaning of the outside stonework on the front of the main building." This gives an idea of the substantial nature of such gifts to Class A Irish hospitals, which garner all residual proceeds.

In view of the near-insolvency of so many of our own hospitals in these days one can not but wonder wistfully why such dreams can come true only in Ireland. What uncanny gift have the native Irish got that we haven't got? Does not a paradox suggest itself here, to the effect that while the Irish believe in the existence and intervention of good fairies they are at the same time the most practical of men?

The hospital situation in New York City affords as good an example as any of what is doubtless a national plight. When total deficits of the city's voluntary hospitals run into the millions we have, according to Mr. William H. Jackson, president of the New York Hospital, "the storm signal of approaching disaster." This view is supported by the presidents of the five county medical societies of the city, who in a letter dated November 28, 1947, declare that "the voluntary hospitals of greater New York face the most critical emergency in their history." An emergency exists "the seriousness of which can hardly be exaggerated." The need is "desperate." The danger is "curtailment of hospital services and the outright closing of some hospitals in 1948." The five presidents point out that the voluntary hospital system itself may yet be jeopardized, which system is "as much a part of the system of freedom as privately endowed universities or any free business enterprise." Without our voluntary hospitals "the private practice of medicine cannot survive."

What is true of the voluntary hospitals, with respect to their plight, is substantially true of the public hospitals.

We respectfully suggest to the powers that be the appointment of an emergency commission to study the Irish experience on the ground. It may be that a relatively poor country has something to teach an obscenely rich but in some ways slow-witted country in the matter of hospital support and advancement.

The Time-Saving Refresher Series of MEDICAL TIMES

Something like a chain reaction, signifying general approval, seems to have been started by this journal's series of time-saving refresher articles on such topics as allergy, anemia, rheumatism, and thyroid disorders. In this current issue we endeavor to explore whatever might interest the alert practitioner in the peptic ulcer field. In future issues we shall present the essentials of other ailments with which the practitioner is dealing daily.

The doctor of today, civilian or ex-military, wants to be "on his toes" and the public is asking more and more for the delivery of medical "goods" contracted for. The American Academy of General Practice is demanding a stipulated number of hours of postgraduate activities in the course of every three-year period as a condition of continuing membership. Our own effort is in line with the spirit of present-day requirements and it will do diplomates themselves no harm to follow the story of medical "know how" in many directions other than their own immediate ambits.

By "something like a chain reaction" we mean the hundreds of letters and requests for reprints (over 2200 sent out to date) by which we have been deluged since the starting of the project under discussion, which would seem to signify the "general approval" cited. This general approval we shall endeavor to hold and extend in our series yet to come.

Rear-Guard Actions

According to Dr. William F. Braasch, Secretary of the National Physicians Committee for the Extension of Medical Service, "It has been demonstrated that the key force behind the relentless drive to foist socialized medicine on this country is the Moscow-dominated Communist party of the United States." This charge is supported by a statement from Dr. Conrad Berens and Dr. Herbert H. Bauckus, Co-Chairmen of the New York Physicians Committee of the National Physicians Committee for the Extension of Medical Service, who state that "The Communists have proclaimed that socialized medicine is the keystone to the arch of the socialistic State. To finance its efforts the Communist party of the United States collects dues equal to six per cent of wages and salaries, and in addition has levied an assessment on all of its members equal to one week's earnings. In some instances the assessment on an individual was as much as $2,500."

Yet one of the most distinguished and respected of our elder statesmen only recently advised a large representative group of the profession meeting in New York to cease fighting what he called a rear-guard action.

Is the total resistance of this country only a series of rear-guard actions? Are all elements to cease fighting?

What would happen then?

Warning All Circus Interests

The expectant mother of today registers with a formula laboratory and, as soon as possible after the baby's delivery, a member of the family 'phones the laboratory to confirm or adjust the date previously given. The laboratory then notifies the home of the exact hour and date of the first formula delivery. One or two days before discharge from a hospital the mother mails the physician's prescription, or, the physician himself mails it, so that when the baby arrives at home the service may begin immediately. The cost of this service is about thirty cents a day.

This marks another milestone in the march by-passing lactation and nursing, with diethylstilbestrol and restricted fluids supplementing the mammary strategy.

The circus of the future may not be able to find a nursing mother and child—marvelous freak—for its side-show.

The Subversive Factor in Alcoholism

Professor Seymour Harris of Harvard, in a study of nutrition in Chile in 1941, associated the peoples' insufficient diet with a tendency toward alcoholism.

We suggest a survey nearer home. The diet of that segment of the American population which crowds the innumerable taverns and groggeries of our cities should

be studied. Nutritional factors doubtless are at the bottom of most of our own widespread alcoholism. This should be the approach to the problem rather than the institution of political measures such as we have already experimented with so fatuously.

There is another ill-fed segment of our population which crowds the drugstores catering to their near-food and ersatz requirements. These crowds, objectively, are much like the tavern crowds as regards noise and conviviality and imperviousness to insanitary service, but differ from them, seemingly, in not in general requiring alcohol. They must represent an element which has not capitulated to alcohol, for reasons having to do with better nervous organization and a better social background. The habits of both these groups are largely conditioned by economic factors, but the nutrition of the alcoholic group must be of a lower grade, since their ready acceptance of alcohol as a substitute for food in many cases denotes basic degeneracy.

The real significance and role of the taverns and groggeries which supply their underprivileged patrons should be more fully realized; they contribute actively to malnutrition, more or less masked by fat, by selling a phony substitute for food and are thus, functionally, subversive of national well being.

Since our productivity, power and health as a nation depend upon sound nutrition, and this in turn depends upon economic democracy, the objective evidences of a sick urban society which we have cited ought to make us realize our social as well as our nutritional deficiencies, if for no other reason than to lead the way to immunization against the virus of communism, which battens upon the underprivileged.

The American Academy of General Practice

Elsewhere in this issue, under a new heading, General Practice, special attention is called to the phenomenal development of the American Academy of General Practice since its founding in June, 1947.

The creation of this organization, destined to wield great constructive power, has grown out of the necessities of a grotesque situation whereby the "foundation stone [the general practitioner] of the finest medical system the world has ever known" was deprived of a voice—which is putting it mildly—and not welcomed behind a certain iron curtain.

The purposes of the Academy, as stated in its constitution (see the special article aforesaid) read like a Bill of Rights. We are specially interested in that purpose which aims "To preserve the right of the general practitioner to engage in medical and surgical procedures for which he is qualified by training and experience." This, we take it, *implies,* among other things, institutional privileges not now enjoyed by general practitioners to any great extent. It seems to us that more should have been *explicitly* stated on this point. There would be little excuse for the existence of the Academy if it did not in fact aim directly at educational and training rights growing out of hospital affiliation and experience of some sort for every qualified practitioner and without which he is like a merely nominal Christian, excluded for some arbitrary reason from the communion table of the Lord. Academic postgraduate study is no substitute for this. Without it allegedly desired professional integration cannot be genuinely achieved. Extension of special privilege here and there and conventional society memberships are irrelevant to the general question.

Despite discrimination, deprivation of prestige and what has at times amounted to ostracism, the general practitioner has carried on magnificently. If this best flower of medicine takes over the gavel he will not abuse his power. He has simply been a good servant, as in the New Testament parable of the talents. He has been faithful over a few things and is now fit to be ruler over many things. To him, then, may be addressed the words of *Matthew* xxv. 21: "Enter thou into the joy of thy lord."

Hormonal Therapy in Urological Practice

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and

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Hormonal therapy in urology has assumed a major role in recent years and the urologist is now no longer content to limit his use of opotherapy for eunuchoidism and inoperable carcinoma of the prostate. It is with this knowledge of rapid therapeutic extension that we are presenting this collective review of our experiences. It will be our endeavor to offer a practical discussion rather than attempt an intensive review and evaluation of a single indication.

Folliculin or the female sex hormone normally gives rise to pelvic congestion, endometrial and vaginal hyperplasia, trigonal hyperemia and smooth muscle relaxation. Its activity in respect to smooth muscle resembles that of vitamin B complex due to its cholin content which is the activating substance of the parasympathetic nervous system.

The fact that estrogenic substances cause smooth muscle relaxation in the physiologic state is most vividly shown by the hydroureter of pregnancy when estrogenic substance is in circulatory abundance and almost miraculously at the spontaneous or surgical termination of gestation the ureters lose their atonic state and rapidly approach normalcy. Another rather striking example of the antispasmodic effect of estrogen is seen in the woman with a markedly ptotic kidney with a partially obstructive ureteral angulation. In the immediate premenstrual phase the obstructive uropathy is symptomatically prominent and is spontoneously relieved when estrogen production is resumed. This phenomenon in these patients is a recurring effect of precise cyclic regularity.

The male hormone (testosterone) is distinctly sympatheticomimetic in its effect and is the antagonist of the female hormone both in the realm of sex and in the entire realm of physiologic economy. The stimulative effect of this hormone is often seen most vividly in the aged male who has become listless both mentally and physically in the postoperative period when nothing seems to aid the patient's recovery. It is to be recalled, however, that in the case of the postoperative there may be a similar condition in existence such as is seen in Cushing's syndrome where there is a negative nitrogen balance which is or may be partially corrected by testosterone because of its property of initiating nitrogen retention. As a word of caution, the use of this hormone is considered by some to be contraindicated in the presence of arteriosclerotic or hypertensive heart disease because of this hormone's sympatheticomimetic properties. The often proposed view that testosterone is of value in reducing renal azotemia is not adequately substantiated by either strict clinical or experimental evidence. In short, the therapeutic properties of the sex hormones can not be sharply delineated since their effects must still be clarified before their specificity can be dogmatically stated. It will be our purpose to discuss the majority of instances in which hormonal therapy is of value rather than present an intensive review and evaluation of a single condition.

Undescended Testes

It is true that the great majority of undescended testes spontaneously descend at puberty. This point is suggested by the figures of cryptorchism in children of 1.5 to 2.0 per cent as compared to the adult percentage of approximately 0.2. In our opinion cryptorchism is actually a second-

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ary manifestation of some primary disorder. A certain group of testicles are retained due to mechanical factors and this group must be recognized and corrected sugically and preferably before puberty. If the reason for non-descent is on an endocrinological basis then this factor needs primary consideration and the cryptorchid state is corrected as an incidental occurence during therapy. If the child, for example, presents a Babinski-Frölich adipose syndrome the treatment is opotherapy with anterior pituitary lobe extract in doses much higher than are usually recommended by the manufacturer. These cases respond pleasingly well after 12 to 18 months' therapy as is demonstrated by a loss of obesity and development of the genital organs; the child is psychologically improved and the testes often descend. However, in the group of undeveloped children both physically and mentally the anterior lobe opotherapy should be supplemented by both adrenal and thyroid extracts. In these patients descent of the testicles can be anticipated in approximately half the cases, but the hormonal theapy is of inestimable psychosomatic value.

Some authors advocate the use of gonadotropic hormone extracted from the urine of pregnant women and have found results of equal value with that of anterior lobe extracts. It has been reported that when as much as 11,200 (Evans) units are used the descent occurs within 4 to 6 weeks. We have not seen this spectacular result. Testosterone has been employed by some, but we feel that this hormone should not be used before the age of 16 since premature puberty may be induced with a potential psychological upset and, too, epiphyseal closure with growth termination is not to be forgotten.

By and large in considering the literature the experience, of authors have been generally not entirely satisfactory in treating cryptorchism with opotherapy. It is our practice to limit the use of hormones in this group to patients where there seems to be some primary endocrinological disturbance, which is treated and the cryptorchid state observed. On the other hand, if genital development is normal it is our practice to place the testicle in the scrotum surgically. We do not feel justified in subjecting the child to a series of injections only to terminate the therapy with surgery. In addition following orchiopexy, we employ opotherapy on occasion to increase testicular and genital mass as a means of inducing a more rapid return or assisting the patient to develop comparably with his fellow playmates. It is to be seen from this discussion that hormonal therapy must be individualized and the primary problem appreciated in each instance rather than that the surgeon should make a dogmatic application of opotherapy for cryptorchism irrespective of other factors.

Impotence

The complexity of this problem is legion and we will discuss only its hormonal therapy. The hormone of choice is testosterone and in large doses (25 to 50 mg. thrice weekly). This therapy alone is beneficial only when there is a hormonal deficiency and either the lesions of the posterior urethra are treated simultaneously or have not existed. It is to be remembered that this hormone in large doses depresses spermatogenesis and in a short time completely suspends it, but after cessation of therapy it reestablishes itself. The keynote here is large dosage and the determination of the maintenance dose. After the minimal maintenance dose has been established testosterone can then be supplied by subcutaneous pellet implantation in order to relieve the patient of frequent injections. The subcutaneous implantation of testosterone permits the patient sufficient hormonal absorption for a period varying from 6 to 10 months and in some instances even longer.

Hypogonadism or Eunuchoidism

What has been said in the previous paragraph on the use of testosterone in regard to impotence is applicable in the castrate. Here, even more distinctly than in impotency, the dosage must be carefully established and the patient after being thoroughly stabilized may enjoy the benefit of pellet implantation. We prefer the subcutaneous implantation site in the scapular area and space the pellets radially,

permitting at least 1.0 cm. between pellets.

Male Climateric

In this condition the symptoms consist principally of weakness and easy fatigability; psychic symptoms of emotional instability, impaired memory and concentration; cardiovascular and vasomotor symptoms of angina pectoris, sweats, headache; and genito-urinary symptoms of incipient prostatism and inadequate sexual function.

To this hormonal problem there are two solutions. The usual treatment is with testosterone and we believe this the most logical. On the other hand, if the patient is not particularly concerned about his sexual prowess many of such patients will respond to a variable dosage of estrogenic substance and we have used with success small doses of stilbestrol or ethinyl estradiol (Estinyl). The dosage with stibestrol can often be maintained at 1.0 mg. daily and with ethinyl estradiol 0.05 mg. every other day or even less. This therapy will often relieve completley the constitutional symptoms, other than impotence, in a matter of days. The mechanism which is thought to function in using the female sex hormone in the male is that the testicle elaborates a water-soluble hormone which has a braking effect on the pituitary much as does estrogenic substance and thus this effect when lost due to testicular dysfunction may be replaced at least in part by the use of estrogens or estrogenic-like substances. It should be fully explained to the patient that this therapy will completely negate his sexual ability although upon discontinuation of therapy it should return to its former level.

In males who are particularly concerned about their sexual powers the hormone of choice in the climacteric is testosterone and the dosage must be determined by trial and later the intramuscular administration of this hormone may be supplanted by pellet implantation. The use of oral testosterone preparations has not, in the hands of the authors, been consistently successful.

Prostatic Carcinoma

The use of estrogens in the treatment of prostatic carcinoma has become an established therapeutical procedure. We prefer to give the patient enteric-coated tablets of stilbestrol in a dosage of 5.0 mg. daily and maintain the patient on this therapy indefinitely unless the breast symptoms become of sufficient magnitude to necessitate variation. Occasionally, particularly in far advanced prostatic carcinoma, we have employed huge doses of estrogenic substance with apparently more striking results, especially when combined with orchiectomy. It is to be remembered that this theapy is recommended only in inoperable carcinoma of eht prostate where such neoplastic extension has taken place that radical prostatectomy either by the perineal or retropubic route is either ill-advised or impossible. Recently Colston has advocated the use of estrogens and if the induration surrounding the prostate recedes sufficiently he then advocates a radical perineal prostatectomy. The value of this procedure is yet to be established, but certainly it is worthy of note and consideration in every instance in which it seems applicable. It is to be emphasized that the hormonal therapy of inoperable prostatic carcinoma is not a cure, but purely a means of symptomatic relief. The life span of these patients seems not particularly changed.

Hormonal therapy may be supplemented or augmented by orchiectomy at such time that estrogenic therapy seems no longer to control the symptoms or in instances where the patient presents painful metastatic lesions in the bones when first seen. We prefer to reserve this procedure as a final rather than as the initial therapeutic approach.

Bladder Carcinoma

In our opinion the use of estrogenic therapy in vesical neoplasm is beneficial in the male and as in prostatic carcinoma it is a palliative measure. We have found it to be most effective in malignancies of the lower grades although on occasion it seems to have some therapeutic effect in grades III and IV. Certainly cytological changes in the tumor are discernible in all grades. In papillomata it most ofen causes an early dissolution so that, as we have observed, a generalized papillomatosis may completely disappear within a few weeks of treatment. This work is still not suffi-

ciently substantiated to suggest its use for anything other than a purely palliative purpose. In the aged with distressing tumors of the bladder associated with great urinary urgency, frequency and dysuria we have employed orchiectomy and estrogens with noticeable symptomatic relief although the tumors seem to have been little altered grossly.

The above discussion refers specifically to males with vesical carcinoma and in the female testosterone in large doses is advocated.

Prostatism

Hormonal therapy in prostatism is not considered as a rational therapy except in instances of the aged where prostatectomy is ill-advised because of other complicating disease processes. Testosterone has been advocated by some, but we consider this hormone to be far tooo dangerous to be advocated except where the patient can be carefully evaluated and is sufficiently old so that the possibility of stimulating a dormant carcinoma is not a factor. Certainly we would not consider its use prior to the ninth decade and even then only after most painstaking consideration and considerable reluctance.

We have used estrogens (stilbestrol) on rare occasions where reasons of sufficient magnitude contraindicated prostatectomy. Its success is often strikingly early and long before there is any appreciable change in the size of the prostate, so that it would appear that it influences vesical function rather than initiating changes in the prostatic volume. It may be said that an estrogenic substance can be of benefit to some patients suffering with prostatism and since it does not remove the obstructive factor in this uropathy it must be considered purely a palliative procedure in carefully selected patients. Present-day hormonal therapy in prostatism has but a rare indication since with the modern means of prostatectomy supplemented by antibiotics and sulfonamides this operation is attended with considerably less danger than that which it carried only a few years ago. In our recent execution of retropubic prostatectomy we have been impressed with the greatly reduced morbidity associated with this operation for it seems to have even less than the perineal prostatectomy. Previously it has been our contention that perineal prostatectomy offered less disturbance to the patient than even the transurethral resection and we have always considered the suprapubic prostatectomy as carrying a hazard of such porportion that its use in our hands had long been discontinued.

Chronic Proliferative Urethritis in the Female

This condition is one of great interest particularly in recent years after the careful work of the late Doctor Folsom. The entity to which we refer is that so often associated with the menopause, whether it be the physiological or surgical climacteric. The patient most often complains of distressing dysuria, strangury, and an occasional episode of terminal hematuria, frequency and a variable degree of nocturia. These patients may, too, complain of great difficulty in emptying the bladder due to what would appear to be a urethral obstruction. Upon cystoscopic examination these patients present a variable picture of a cystic type of trigonitis with a similar involvement of the urethra to actual hypertrophy and thickening of the vesical neck; this latter finding has led to the term "female prostate." It is true that the primary therapy must be directed to the topical treatment of the lesion or lesions whether it be by fulguration of the cystic areas, resection of the obstructive tissue at the vesical neck in the more severe cases, or endoscopic therapy of the less severe. But local therapy is not enough, and vigorous supplemental estrogenic therapy must be employed. In our opinion, all of these patients can be offered comfort if they will continue therapy for a sufficiently long period; it is not unusual for the hormonal and topical therapy to have to be extended over a period of 12 to 18 months; it is true that this is the exceptional case but such a possibility must be realized when dealing with a particularly recalcitrant lesion.

We combine the local therapy along with 10,000 to 20,000 I.U. of estrogenic substance thrice weekly and in addition administer a conjugated estrogen at the same time. These large dosages are continued for at least three weeks and then for an additional period of 4 weeks the therapy is maintained at half strength until symptoms of estrogenic toxicity are manifested or there is symptomatic vesical improvement. This therapeutic procedure is used in all instances even though the patient may not be experiencing the menopause. If this therapy disturbs the menstrual regularity, as it may in the younger patient, the hormone is reduced and varied so as not to interfere. Our results since adopting this therapeutic regimen have been most gratifying and we believe our enthusiasm well founded.

Male Sterility

The management of male sterility has not been highly successful although in instances of oligonormozoospermia much can often be accomplished with the use of gonadotropic hormone. In our experience it is necessary to employ dosages twice and often three times that suggested by the manufacturer.

Testosterone propionate in small doses two to three times weekly deserves mention in the treatment of male sterility and is particularly useful in instances of moderate oligonormozoospermia and particularly when associated with spermatic hypokinesis. It must be remembered that large doses of testosterone will effect a marked oligonormozoospermia or complete cessation of spermatogenesis so that this will defeat the entire therapeutic purpose. As mentioned previously spermatozoa soon reappear in the ejaculate upon discontinuance of testosterone.

In instances of azoospermia testicular biopsies are made to determine the presence or absence of spermatogenesis and thus give a lead as to whether the azoospermia is due to some obstructive factor. We have found that gonadal biopsies in the male are of inestimable value in determining quickly and accurately the cause and potential possibilities of therapy in male sterility.

Therapeutic Impotentia Erigendi

In penile surgery it is often desirable to prevent erections. The most common need is following circumcision and it is our practice to give the adolescent or adult stilbestrol daily for two days prior to operation and three days postoperatively. This affords the patient considerable comfort and in plastic surgery or partial penile amputations it assists greatly in preventing undue tension on sutures. Stilbestrol has also been found effective in reducing catheter irritation of the posterior urethra in instances where a retention catheter must be retained for long periods in young adults.

Hormonal Control of Urinary Salt Solubility

In 1945 Shorr suggested the use of natural estrogens combined with aluminum hydroxide gel to reduce the incidence of recurrence of calcium phosphate or carbonate, magnesium phosphate, magnesium ammonium phosphate or calcium magnesium ammonium phosphate calculi in the urinary tract. The responsible mechanism of estrogenic therapy in the prevention of urinary calculi is that the estrogens, by increasing urinary citrate excretion, reduce the concentration of the calcium ion participating in the precipitation of calcum phosphate, replacing the phosphates with a weakly ionized solution representing a calcium-citrate complex. The Amphojel diverts the urinary phosphate excretion of the intestinal tract and thus reduces the amount of phosphates available for urinary precipitation.

We have no data available as to the effectiveness of this medicinal method in preventing urinary calculi. However, we have employed this routine with excellent results in maintaining a crystal-free urine in non-ambulatory patients suffering severe fractures with or without concomitant urinary tract drainage. It has been of particular value in patients having a fractured pelvis and an associated vesical rupture necessitating prolonged vesical drainage. In the male patients we have em-

—Concluded on page 23

Diagnosis in the Case of Rectal Bleeding

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As a rule the cause of bleeding from the rectum may be easily ascertained. Inspection may show a bleeding hemorrhoid, fissure, or an ulcerated mass which has protruded below the sphincter muscle. Digital examination may disclose a mass and sigmoidoscopic investigation prove this to be the source of bleeding. If the lesion is beyond the reach of the palpating finger, or if its source is from a lesion which is not palpable but can be seen through a sigmoidoscope, the problem is simplified. A study of the colon and small bowel by the roentgenologist may be necessary.

However, when these methods of examination fail, the problem becomes more complex. If bleeding from the rectum is accompanied by the vomiting of blood, we, of course, suspect the source to be proximal to the duodenum, and investigation should be first directed there. In the absence of this symptom, and no history of dyspepsia, solution of the problem facing the responsible physician may be difficult. The fundamental fact to keep in mind is that any bleeding must of necessity come from an organic lesion. After ruling out a blood dyscrasia, we must assume that error has occurred somewhere in the examination, or that with the means at our disposal diagnosis cannot be made. It is my experience that error is likely to have occurred.

Sigmoidoscopic and roentgenologic studies should be repeated. If again negative, sigmoidoscopic examination without previous enemas should be attempted. If no blood is found, every visible pathologic lesion, however insignificant, should be removed. Certainly hemorrhoidectomy should be done. We all know that insertion of an anoscope is prone to obscure a small bleeding point. We know also that the size of the hemorrhoid is not necessarily in proportion to its ability to bleed. Also surgical hemorrhoidectomy has its weakness in that all hemorrhoidal tissue is not removed. The bleeding may come from any vessel which has not been sutured and the patient will not submit to repeated surgical procedures. It is known, too, that the injection of sclerosing material will control bleeding. For these reasons, office hemorrhoidectomy is preferred in the cases under discussion.

When the surgeon is satisfied that there cannot possibly be bleeding from the hemorrhoidal area, sigmoidoscopic examination with and without enemas should be repeated, in order to prove that the source of bleeding is beyond the reach of the examining instrument. The field to be studied is considerably narrowed when we can assert confidently that the bleeding source is beyond the reach of the sigmoidoscope. Consultation should be held with the roentgenologist. When he is willing to declare that he has exhausted all the means at his disposal without accounting for the bleeeding, it is wise sometimes to send the patient to another laboratory. In several instances, probably because of variations in technique, a lesion has then been demonstrated. Should all these procedures prove disappointing, exploratory laparotomy is definitely indicated.

We do not claim, of course, that we can account for bleeding in every instance, but we have found it worth while to doubt the negative results of our own examinations and those of others when it is perfectly evident that an organic lesion is present. Valuable time must not be wasted. Too much emphasis cannot be placed upon the importance of constant and aggressive investigation.

7 Bay State Road

Peptic Ulcer, Its Causes and Therapy

This summarization attempts to cover all of the known therapeutic information on the subject and is designed as a time-saving refresher for the busy practitioner.

The problem of peptic ulcer presents a challenge to medical science since it ranks tenth in order of cause of death and twelfth as a cause of days' work loss.[1] Estimations made from evidence available have revealed that from 5 to 12 per cent of the people in the United States become afflicted with peptic ulcer during a lifetime.[2] Some authorities believe the figure is about 10 per cent of the population whereas more conservative estimates state about 5 per cent.[3, 4] Even with this lower figure the number is sufficiently large to create a serious problem.

Definition

Peptic ulcer is defined as that type of ulcer which is located upon the mucous membrane of the stomach or duodenum.[5] It usually occurs in young adults and persons of middle age. However, it may occur at any age for it has even been found to be present in infants of only a few weeks of age. A recent study has shown that this condition occurs more commonly in older people than previously supposed. Persons of over 60 years of age were found to make up 10.5 per cent of the peptic ulcer cases.[6, 7] In children and infants the condition may not be recognized unless there are complications such as vomiting or hemorrhage.[8, 9]

Incidence

There are usually more males than females who have peptic ulcer and duodenal ulcer is more common than is the gastric type. A study of 15,567 patients showed a ratio of 1 gastric ulcer to 12.5 of duodenal ulcers.[10] Necropsy records have shown that during the nineteenth century duodenal ulcer was rarely reported whereas gastric ulcer was reported in a ratio as high as 20 to 1.[11] Since that time the ratio has gradually changed. From available records it is concluded that the overall incidence figure has not changed but that the location of almost half the peptic ulcers has changed from the stomach to the duodenum.[2] The sex ratio has also changed for the disease developed chiefly in women during the middle half of the last century. These changes have been supported by mortality records and clinical experiences.

Cause

The cause of peptic ulcer is not definitely established. Various theories have been advanced. It has been determined that for some unknown reason areas of the mucosa lining the stomach or duodenum lose their ability to resist the digestive action of the peptic, acid gastric juice.

The acute ulcer usually develops into a chronic ulcer but it is not definitely established whether chronic ulcers result from only certain types of acute ulcers or whether from all types regardless of the basic etiologic agent. It is believed that an acute ulcer, which has been brought about by any means, under the right conditions will become chronic.[2]

The most commonly known theories which have been propounded as to causes of the acute ulcer which develops into the chronic type are as follows: (a) the acid-peptic; (b) the vascular: infarction, spasm, tugging on the vessels; (c) the gastritic: specific streptococcus, nonspecific inflammation from acid or rough and irritating foods; (d) the neurogenic: vascular spasm, hypermotility and secretion; (e) the allergic; (f) the nutritional; (g) the unknown constitutional, and (h) the un-

From the Editorial Research Department of the MEDICAL TIMES.

known metabolic or endocrine. The following factors which predispose to chronicity have been established: (a) acid; (b) rough food; (c) gastric retention; (d) poor untrition; and (e) mucosal gradient of susceptibility to acid, the rank order of decreased susceptibility being the fundic, the lesser curvature in the pyloric region, the pyloric, duodenal, jejunal and ileal mucosa.[2]

By analysis it can be shown that abnormal external destructive factors acting on the mucosa, decrease in the normal resistance of the mucosa to injury and in its normal healing properties or a combination of both may cause the ulcer.

Acid-peptic Theory

The acid-peptic theory is best known and has been widely accepted. The role played by the chemical and digestive properties of gastric juice has been shown experimentally and clinically.[10] It is generally conceded that a peptic ulcer patient's stomach loses its ability to resist the digestive action of the acid pepsin secretion and that the presence of free hydrochloric acid is necessary for the production of ulcers.[12]

The acid gastric juice is believed to cause the ulcer to form and to account for the inflammation, which is of a chemical nature, to develop.[13] The pain threshold of the stomach nerves is lowered as a result of the inflammation and sensitivity results, Irritation of the acid may then be sufficient to stimulate them to the point of pain. Motility, spasm or pressure may also cause pain. By continually neutralizing the acid the pain threshold is raised and pain disappears and the lesion heals.[14]

Psychosomatic Aspects

In recent years psychosomatic medicine has gained in prominence. In considering peptic ulcer one must not overlook the role of emotional states in the search for a cause. One of the first steps is to decide whether the emotional or psychic factors are the causative agent or simply contributory. It is necessary to consider the patient as a whole and important that the emotional factors not be emphasized too much.[2]

There has been described in the literature a wide range of personality types which have been considered as typical of the peptic ulcer patient which in turn leads to the question of whether the stomach responds physiologically in a characteristic manner to certain emotional states.[2]

Unpleasant or disquieting conditions in the individual have been shown to affect gastric secretion and motility.[15] Experimental work first reported in 1920 has shown that anxiety, stress, frustration, guilt, hostility and resentment may cause hypersecretion and motility of the stomach in some people.[16-16]

Hypothetically, then, it can be assumed that in certain persons emotional states induce gastric hyperactivity and that many peptic ulcer patients have a characteristic personality pattern. Although a great many reports have appeared in the literature in support of the theory that gastric hyperactivity alone can cause a peptic ulcer no really definite conclusion can be reached due to lack of certain evidence.[2]

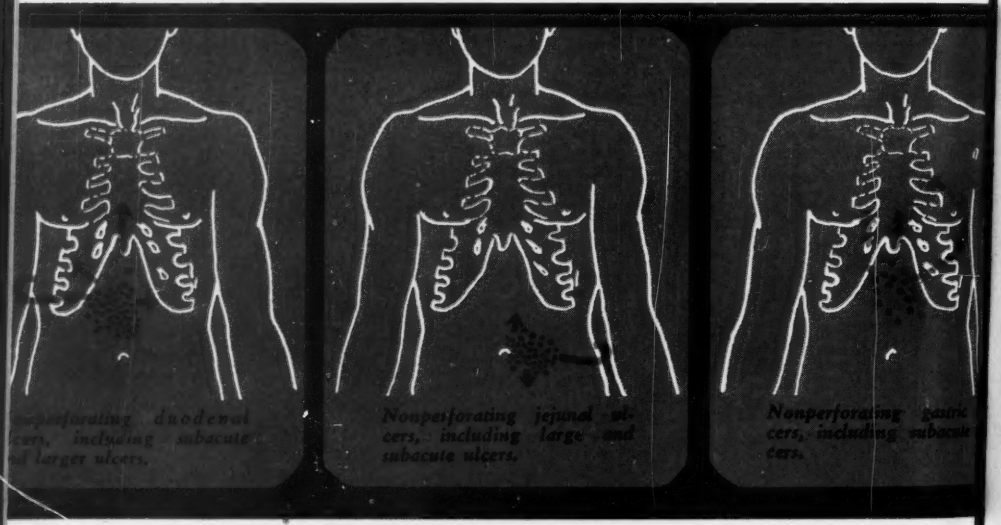
Stimulation of gastric activity as a result of an emotional state is believed to follow the vagal pathway since the vagal nerves are completely responsible for the cephalic phase of gastric secretion and are necessary to gastric motility or tone. If this is proved to be so the stimulation of secretion and motility should not be confused with that which occurs as a result of thought of or ingestion of food. It has been suggested that the term "emotogenic secretion" be applied to the gastric secretion occurring as a result of an emotional state so as to differentiate the two types. The adjective "emotogenic" could also be applied to motility changes occurring also as a result of an emotional state.[2]

In a recent report of a study of a case of peptic ulcer it was demonstrated that anger stimulated the production of a large volume of hydrochloric acid and the effect was noted after gastric acidity had been completely inhibited by enterogastrone. Bilateral vagus section was shown to abolish the stimulating effect of anger. In order to account for the role of anger and fear in gastric function a theory is advanced in which a specific type of correlation between the affective states and

feeding is emphasized. In the infant there is a close emotional association or equation between anger as evidenced by crying and receiving food on the one hand, and fear and what is feared (not receiving food) on the other. As the child develops this association is either weakened or broken altogether. It is thought that in some ulcer patients as well as some "normal" individuals the association continues and is expressed through the process of "regressive innervation." Regressive innervation involves the recapitulation of an infantile pattern of physiologic responses to certain emotional stimuli, mediated by nervous pathways. Hostility or anger is considered as a potential pathogenic agent in ulcer since it does increase the gastric secretory and motor activities although it is not possible to quantitatively estimate its importance.[19]

Some authorities believe that the psychosomatic causes of ulcer cases, particularly of duodenal ulcers, have more supporting evidence than any other factors.[3, 10] Further evidence substantiating the importance of psychosomatic causes is the increase in number of cases of acute ulcer during the air-raid periods in England.[20]

It is important that emotional factors are not overlooked in cases of peptic ulcer. However, some feel that they may be unduly emphasized since ulcer cases are not necessarily limited to the hard-working and worrying individuals but may occur in all races, all countries and in people of all occupations. It may occur at any age as well.[13, 21]



PAIN SITES IN PEPTIC ULCER

(From Eusterman and Balfour)

FIG. 1. Each dot indicates the point at which each patient felt the maximal distress. Arrows indicate regions to which pain was projected.

Symptoms

Peptic ulcer, which includes gastric and duodenal ulcers, is characterized by paroxysms of pain which may be duli, aching, burning but not lancinating. It may be mistaken for "indigestion." In gastric ulcer cases the pain is usually noticed shortly after meals since the food ingested protects the lesion from the gastric juices for a short time. As the food passes on the ulcer is again exposed to the action of the

Fig. 1 through courtesy of John Wyeth, Inc.

peptic acid. Duodenal ulcer pain does not occur for some hours after the food is ingested since the duodenum is not only farther along the tract but is also narrower and slows down the passage of the food, allowing for a longer protective action. Certain types of food, such as albuminous materials, and those with great acid-combining properties relieve the pain more so than those which do not possess any great acid-combining properties. Pain is also increased by foods which delay the emptying of the stomach.

The pain usually is hard to localize with the exception of rare typical cases in which it can be localized to the touch in the right epigastrium. The right rectus muscle may be more or less rigid. The peritoneum may be involved if there is marked local tenderness and rigidity and if there is pain which radiates to the back the pancreas may be involved. In gastric ulcer tenderness may be noted to the left of the 10th and 12th dorsal vertebrae, whereas in duodenal ulcer it may be to the right. The ulcer or ulcers may adhere to other viscera and sometimes penetrate as well.

Not all peptic ulcers are accompanied by pain, nor do they all have the typical clinical features usually described as characteristic. Some authorities have classified ulcer cases into those in which symptoms are regular; those in which symptoms are irregular; and those in which symptoms cannot be classified as either regular or irregular. In the latter group the problem of the latent or quiescent symptomless ulcer is a neglected one. Many patients are first introduced to their disease either through a G.I. series for some vague abdominal complaint or by routine x-ray check-up, while many others are suddenly afflicted with dizziness, weakness, accompanied by or followed by melena or hematemesis, and learn of their ulcers by follow up x-ray. While this picture receives rare notice in the literature, in actual practice it appears to the average practitioner almost as common as the better known entity of the painful distressing type. It is not at all unusual to find in these patients a remarkable freedom from epigastric distress and to note that they suffer little from unrestricted dietary habits. Some, however, will admit to such vague complaints as fullness after meals, flatulence, pyrosis, indigestion, and other not too typical symptoms.

It is not unusual either to see in well established ulcer cases who have been through the throes of painful episodes, stages of tarry stools or hematemesis with no remarkable gastric complaints. Cases occur, too, in which the initial symptoms are those of the complication. The vomiting of pyloric obstruction, or the picture of acute ruptured ulcer with the typical signs of boardlike rigidity, pneumoperitoneum and shock, may appear in a patient who denies previous gastro-intestinal disturbance.

A complication which distorts the ulcer symptom complex and is said to occur in at least one in four surgically verified ulcers is chronic penetration or "protected" perforation of a chronic ulcer. These lesions are usually posterior and involve some neighboring organ such as the pancreas or liver, less frequently the gallbladder or colon. The omentum is usually implicated, and localized abscess in the lesser peritoneal cavity may occur. If the pain becomes more severe, if the usual mode of obtaining relief is less effectual, if the so-called pain-food-ease sequence is less distinctive, and especially if the originally localized pain extends toward the region of the liver, posteriorly, or upward into the chest, or in the case of a jejuenal ulcer, downward toward the pelvis, the possible presence of deep penetration or slow perforation should be seriously considered.

Malignant changes occur in a certain percentage of gastric ulcers, estimated at 5-10 per cent. The diagnosis may be difficult to make but should be suspected where pain becomes continuous; is no longer relieved by food or antacids; if the pain is made worse by eating; and if loss of appetite and weight begins. Besides repeated x-ray studies, doubtful cases should be subjected to gastroscopy.

Constipation usually occurs but in exceptional cases there may be diarrhea. Hemorrhaging frequently occurs and if

repeated anemia may result. Hemorrhage or "dieting" will bring about a loss of weight, pallor and general debility.

Laboratory Examination

Laboratory examination of the gastric contents usually shows hyperchlorhydria, in which case the pH of the stomach is below normal. X-ray examination is a valuable aid in determining the size and location of the ulcer. Small lesions in the stomach, not always revealed by x-ray, can be detected by use of the gastroscope by means of which the gastric mucosa can be examined. This instrument is useful as well in determining the progress of therapy.

Therapy

There are two aspects to peptic ulcer therapy. The first aim is to heal the ulcer in as short a time as possible and to remedy any complications such as hemorrhage, obstruction or perforation and the second aim is to prevent recurrences. At present this second aim is the more difficult to accomplish.

Hemorrhage is the most common complication of peptic ulcer. Fortunately most cases are not severe and are responsive to treatment without undue hardship. However, moderate to severe cases occur with sufficient regularity to deeply concern the practitioner and heavily tax his therapeutic armamentarium. The mortality in severe bleeding varies with age, the degree of blood depletion, and the response to emergency measures. Treatment varies with each authority, but certain basic principles are common. The patient should be put at rest, and measures instituted to combat shock and restore blood volume. Difference of opinion arises in methods. The usual morphine and ice bag have been questioned lately as being efficacious or advisable for bleeding ulcer. It is said that morphine produces a relaxation of the tone of the duodenal cap, and that cold increases the contraction of hollow abdominal organs, and therefore the use of these time honored measures would be contraindicated if these findings are true. In any event the support of the patient is maintained with parenteral fluids and transfusions if necessary. If sedation is needed one of the barbiturates may be administered. It was at one time considered proper, and still is by some authorities, to give the patient nothing by mouth for 24-48 hours or longer, but in the past several years a change in this conception was created by the observations of Andresen and Meulengracht who pointed out that while a bleeding ulcer patient often dies from shock and exhaustion, some stop bleeding even though being fed, and often without changing the form of diet. Meulengracht thus established the important principle of prompt feeding, and even included meat along the lines specified in his diet. To further sustain the patient hematinics, multi-vitamins, rutin, rotolysotes, and support to other affected organs are employed. General consensus of opinion favors the medical treatment of bleeding ulcer. Emergency surgery has its advocates, but most surgeons consider it too hazardous, and far less favorable than medical measures. Surgery has its place in the after care when the patient has recovered from the shock and debility of hemorrhage.

The principles of medical treatment of gastric or duodenal ulcer are well established and generally satisfactory. Their aim is to provide optimum conditions for healing which is considered complete when the ulcer is closed and is covered by normal mucosa. It is thought that the majority of cases will respond to adequate treatment.[22] Some ulcers may heal spontaneously but the greatest problem is the prevention of recurrence. Peptic ulcer is often classed as a chronic disease as a result of this recurrence tendency. Gastric ulcers are usually more responsive to therapy than are duodenal ulcers.

Physical and Mental Therapy

Physical and emotional rest is first necessary in the therapy. All disturbing factors such as physical fatigue, emotional stress, alcohol, tobacco, coarse foods, and any foods or beverages which increase secretion should be eliminated. Meals should not be rushed and food should be chewed thorougly. The patient should get plenty

of rest and sleep preferably by taking a vacation or making a change of some sort although the latter usually is not practicable. He should be reassured concerning the condition and if necessary sedatives such as bromides or barbiturates may be given to relieve anxiety.

Diet

Diet is of utmost importance and should be highly nutritious so as to promote healing. Fat has an inhibitory action on gastric secretions which factor should be employed in the dietary control. Smaller amounts of bland food at more frequent intervals will serve as buffers for the acid. Milk usually forms the basic item in such a diet since it not only provides some of the necessary vitamins but also aids in neutralizing gastric acidity, possesses a high protein value and is effective in small quantities. Supplementary vitamins are often advisable and particularly ascorbic acid when raw vegetables and fruits are omitted from the diet. Ascorbic acid is also useful since it is believed to be of value in promoting healing.

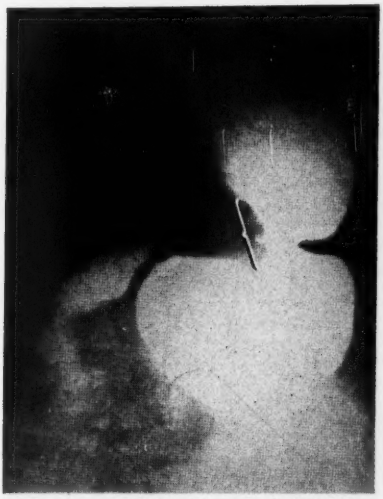


FIG. 2. ULCER OF THE LESSER CURVATURE OF THE STOMACH.

Figures 2, 3, 4, & 5 courtesy of Charles C. Thomas, publisher of 'Gastroenterology In General Practice' by Louis Pelner, M.D.

Sippy Regimen

The principles of treatment of peptic ulcer by combining antacid administration with frequent feedings were first set forth by Sippy.[23] He recommended three small meals each day with a mixture of milk and cream given every hour on the hour and antacid. powders every hour on the half hour. Powder I contained 0.6 Gm. each of magnesium oxide and sodium bicarbonate and was given alternately for about 14 doses daily with Powder II which contained 0.6 Gm. of bismuth subcarbonate and 2.0 to 3.0 Gm. of sodium bicarbonate. Since that time modifications of this method have been developed when it was found that the absorbable antacids might eventually bring about an alkalosis.[24-26]

Antacids

Diet, alone, in some cases may be effective. In those cases which do not respond to diet and in which there is a great hyperacidity and hypersecretion antacids are of value. It is important to select the proper type and in doing so alteration of body chemistry should be avoided as much as possible.

FIG. 3. ULCER OF THE LESSER CURVATURE OF THE STOMACH.

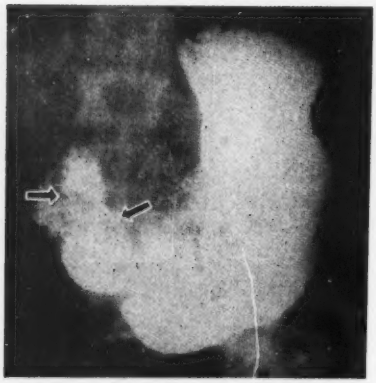
The akaline antacids in Parson's classification[25] which are represented chiefly by sodium bicarbonate are effective in quickly relieving the pain but as previously mentioned they are absorbed and frequently

will cause alkalosis. In some instances the neutralization is transient and the gastric acidity rebounds. Kidney stones may form as a result of the alkalinization of the urine.

Neutral Antacids

Tribasic calcium phosphate and tribasic magnesium phosphate are considered to be neutral antacids which are not absorbed and provide a prolonged neutralizing effect. They can be given in water or in tablet or capsule form and have shown value in those cases where prolonged therapy is necessary. These substances appear to stop digestion promptly and may be carried out in the feces unchanged or may provide magnesium and phosphorus for the blood. The usual dose is 1 to 5 Gm.[27] Although no undue constipating or laxative effects are reported it is claimed that tribasic calcium phosphate is somewhat constipating and that tribasic magnesium phosphate has a laxative action.[28]

FIG. 4. DUODENAL ULCER OF THE FIRST PORTION OF THE DUODENUM.
(Duodenal cap or bulb.)



They are relatively non-toxic and usually do not produce systemic alkalinization.

Aluminum Compounds

The next group of antacids is made up of the aluminum compounds. Included under this heading are aluminum hydroxide and aluminum phosphate. Aluminum hydroxide is usually administered in the form of an aqueous suspension which generally contains the equivalent of 3 to 4.4 per cent of aluminum oxide. It is usually flavored, sweetened and preserved. It is also available in tablet form. It is non-toxic when given orally, non-absorbable and neutral and acts by chemical reaction to neutralize the hydrochloric acid of the stomach. It does not possess the disadvantages of the ordinary alkalis in that it does not increase the pH of the gastric

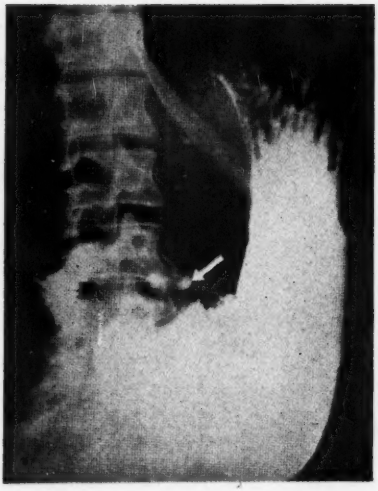


FIG. 5. ULCER OF THE FIRST PORTION OF THE DUODENUM.
(Duodenal cap or bulb.)

juice beyond the point of interference with peptic digestion, does not cause systemic alkalinization and does not stimulate a compensatory increase in free gastric acidity.[28] Its astringent and demulcent effects are thought to be of some value locally. If constipation occurs, particularly in weak, elderly or severly ill patients, addition of heavy magnesium oxide to the dose given in the evening may help.[29] Some have found that smaller and less frequent doses of this combination than of the aluminum hydroxide gel alone will control pain and heartburn.[30] The usual oral dose

of aluminum hydroxide gel is 4 to 8 cc. in one-half glass of water or milk every 2 or 4 hours or one-half to 1 hour after meals.

Aluminum phosphate gel is also an aqueous suspension and usually contains 3.8 to 4.2 per cent of aluminum phosphate with flavoring, sweetening and preservative. It acts similarly to aluminum hydroxide gel but does not interfere with phosphate absorption as does the former in excessive amounts (in ordinary doses this is not objectionable since the diet is usually rich in phosphorus). This compound is of particular value in those cases where the high phosphate diet cannot be continued, or where there is a relative or complete deficiency of pancreatic juice or where there is diarrhea. It is necessary to give larger doses of this drug since its acid-combining power is less than half that of aluminum hydroxide. The usual dose is 15 to 30 cc. alone or in water or milk every 2 hours while the ulcer is active. This may be decreased to 44 cc. 4 times a day with or after each meal and at bedtime or to 30 cc. 6 times a day, with or after and between meals and at bedtime when the active stage has passed.[28] This compound is believed to be less constipating than the hydroxide and to improve the appetite and thus bring about a return of strength.[31]

Hydrated sodium aluminum silicate in powder form is also used in the therapy of peptic ulcer in doses of 3 Gm. four times daily between meals and at bedtime. It does not abolish gastric acidity but adjusts the pH to within the physiological range so that there is no acid rebound nor does it cause alkalosis. It acts similarly to the other aluminum compounds. It is also available in combination with alkaloids of belladonna (0.19 mg. in each dose) thus providing antispasmodic effect as well.

Magnesium Trisilicate

The fourth group of antacids[25] is characterized by magnesium trisilicate which is a tasteless white powder administered orally in tablet form or in liquid suspension. It not only neutralizes the hydrochloric acid in the gastric juice by chemical reaction but also possesses absorptive properties. It does not produce alkalosis and does not interfere with peptic digestion. In ordinary dosage there is no toxicity but in large doses magnesium chloride is formed and causes diarrhea. Magnesium trisilicate is particularly useful since it coats the crater of the ulcer with an adherent coating which serves to localize its therapeutic effect.[32]

Gastric Mucin

Gastric mucin is a fraction obtained by precipitation with alcohol from the supernatant liquid after hog stomach linings have been digested with pepsin-hydrochloric acid. It is an effective antacid but possesses an objectionable odor and taste. The average dose is 2.5 Gm. at two hour intervals.[28] Recently a new product was introduced which combines in tablet form gastric mucin, dried aluminum hydroxide gel and magnesium trisilicate and which is claimed to give prompt relef from pain. It coats the ulcer lesion with a viscid, tenacious coating and does not cause systemic alkalosis or acid rebound. The usual dose is 2 tablets well chewed every 2 hours with no fluids taken within one-half hour.

There are also available combinations of aluminum hydroxide gel with magnesium trisilicate or with mineral oil for those patients with constipation, as well as combinations of aluminum hydroxide, magnesium trisilicate and colloidal kaolin in powder and tablet form.

Calcium Carbonate

Calcium carbonate or chalk has been widely used by many physicians for years and is still in favor with many. Although it has a tendency to cause constipation it does possess many advantages as an antacid. Magnesium oxide may be added to the calcium carbonate in cases of constipation with better results than with calcium carbonate alone. This mixture, if flavored with oil of peppermint, is useful in ambulatory cases.[26] Some have found useful the following mixture taken in doses of one teaspoonful in a glass of water

three hours after the main meal of the day.[33]

Bismuth subnitrate	30
Light magnesium oxide	20
Prepared chalk	60

Amino Acids

The development of the protein hydrolysates or amino acid preparations and their use in certain conditions has led to trials in the treatment of peptic ulcer. By supplying the essential building blocks for tissue repair, healing rates are greatly increased. Persons suffering from gastric ulcer are usually on a restricted diet with added alkalis to neutralize gastric acidity as has been mentioned previously. This procedure inactivates the pepsin so that protein digestion is impaired. It is also likely that low protein diets may actually induce ulcers. With protein depletion healing of the ulcer is made most difficult if not impossible. Amino acid therapy on the other hand neutralizes gastric acidity since the amino acids are ampholytes and bind free acids. Protein deficiency cannot result for the amino acids do not require digestion prior to assimilation. The result is acid neutralization without impairng the protein supply for the body and a rapid healing of the ulcer.[34]

In clinical experiments the administration of a high caloric diet, using a carbohydrate, together with a high amino acid mixture in place of all food and for two weeks after the pain has disappeared resulted in good responses in all but about 10 per cent of the cases. The treatment was gradually tapered off after the two weeks period free of pain. In some cases there occurred diarrhea which was usually painless and not difficult to bring under control. Pain and distress usually disappeared within 24 to 48 hours. The protein hydrolysate was administered in doses furnishing 0.6 Gm. of nitrogen per Kg. of body weight and a carbohydrate to make up to 50 calories per Kg. The calculations for determining such doses are as follows:

wt. in lbs. $\div$ 2.2 = x (wt. in Kg.)

50x = the caloric and .6x the nitrogen intake for 24 hours

$$\frac{.6x}{\%\text{ of N per Gm.}} \times 100 = \text{grams of hydrolysate required or y.}$$

Since each gram of hydrolysate roughly yields 4 calories, the total calories furnished by the hydrolysate are 4y.

50x — 4y = No. of calories to be furnished by carbohydrate

$$\frac{50x - 4y}{4} = \text{No. of Gm. of carbohydrate needed.}$$

The protein hydrolysate and the carbohydrate were dissolved in a watery mixture of 1 to 1½ liters or in two separate solutions and chilled for administration. Chilling removes some of the unpleasant taste. The solutions were divided into 8 equal parts and 1 part given every 2 hours so that the 16 waking hours were covered. If night pains were severe additional feedings with or without the carbohydrate were given when the patient was awakened by the pain. If the pain recurred before the end of the 2 hour period the feedings were divided into 10 or 11 and given 1-½ hours apart or into 16 and given every hour. No vitamins were given the first week and smoking and alcoholic beverages were prohibited. Water was not restricted.[35]

In a later study supplementary vitamins including thiamine chloride, 50 mg., ascorbic acid, 100 mg., riboflavin and niacin, each 50 mg., were given and 15 U. S. P. units of Liver Extract intramuscularly twice a week. If there was a tendency to diarrhea 4 cc. of an aqueous suspension of aluminum hydroxide was given twice daily. No complete abstinence from smoking was required and no sedatives or antispasmodics were given.[36] It is important that the therapy be continued for the full period and that no false sense of security be developed because of the rapid remission of symptoms. This therapy is advised for intractable cases only, at present.[35, 36] Other trials are being conducted on this therapy and at present its status is that of an adjunct in peptic ulcer treatment rather than a curative agent.[37]

Recently a tablet has been marketed

which chiefly contains casein. It is claimed that it neutralizes without alkalinizing the stomach content so that there is no damage to the gastric mucosa. This is of value in cases where prolonged therapy is necessary.

Resin Antacid

The use of ion-exchange resins based on their attraction of excess acid recently led to their introduction for therapy in the control of gastric acidity. The one used is an amber granular substance, insoluble in all of the commonly used solvents and available in the activated or free base form.

This resin does not remove the acid simply by means of ion exchange, but rather by adsorbing it molecularly and by fixing it reversibly. The resin binds the excess hydrochloric acid to itself after which it passes into the intestine where the acid molecules are released, the resin being eliminated unchanged.

The resin which has recently been marketed for this purpose is a polyethylene-polyamino methylene substituted resin of diphenyloidmethylmethane and formaldehyde in basic form. It is ground to an average particle size of 200 mesh. It has been shown clinically to be effective in the treatment of peptic and duodenal ulcerations. It reveals great speed of action and acid-neutralizing power and specifically inhibits peptic activity. Neither the phosphate nor the chloride ion is removed. Constipation or diarrhea do not follow its administration, and it causes no acid rebound, accompanied by intense discomfort. The acid-base balance of the body fluid is not disturbed because the compound does not pass through the intestinal wall.

The new resin product is supplied in capsules containing 0.25 Gm. each. In ordinary hyperacidity one or two capsules are given with a few sips of water and repeated as required. In acute peptic and duodenal ulcers one or two capsules should be administered every two hours during the day. The dosage may be increased if necessary. The usual dietary restrictions should be observed. This method of treatment represents a novel and interesting approach to therapy of gastric ulcers. Clinical trial of this drug on 30 patients with peptic ulcer pain relieved the pain in all but one.[38,43]

Endocrines

The endocrine glands have been investigated as possible agents in the etiology of peptic ulcer and for their value in therapy. Parathyroid extract, desoxycorticosterone acetate and posterior pituitary extract have been used with some success in certain cases.[38, 43]

Surface Active Agents

Further investigation is necessary before definite statements can be made regarding the value of synthetic detergents or surface active agents in peptic ulcer therapy. They are known to inhibit the action of pepsin and since acid and pepsin together cause more severe ulcers than acid alone their value has been investigated.[47] Sodium alkyl sulfate and other forms such as sodium dodecyl sulfate have been shown to have some value in stimulating mucus secretion necessary to the stomach's protective mechanism as well as in the inhibition of peptic activity but a great deal remains to be proven.[48-56]

Extracts of Stomach and Small Intestine

Stomach extract has been used to treat gastric ulcers and intestinal extract for duodenal ulcers with some degree of success in relieving the symptoms and decreasing the size of the ulcer niche.[56] Gastric juice, removed from normal subjects, when administered to peptic ulcer patients, was found to give good results. It is possible that a protective substance secreted into the gastric juice from the gastric and duodenal mucous membranes is absent or present in very limited quantities in peptic ulcer patients and consequently when given to them in the form of normal gastric juice allows for improvement in the condition.[57]

Antispasmodics and Sedatives

Antispasmodics are also useful in management of peptic ulcer. They are to be used as indicated and as tolerated by the patient. Belladonna and atropine are useful because of their power to relax smooth

muscle and to curtail gastric secretion. Belladonna is particularly helpful in that it reduces gastric and duodenal spasm and hastens the rate of emptying of the stomach.[24,26,58,59] In some cases the antispasmodic (extract of belladonna) may be given in combination with a sedative such as phenobarbital in doses of 15 mg. each in capsules. If a liquid preparation is desired 0.5 cc. of tincture of belladonna in 5 cc. of elixir of phenobarbital may be prescribed.[26] A recent report recommends 65 mg. of phenobarbital three times daily or 260 mg. of cannabis extract four times a day to allay anxiety.[59]

Drip Therapy

In intractable cases and in some where there is massive hemorrhage continuous drip or therapeutic aspiration may be necessary. Where continuous drip therapy is used aluminum hydroxide has shown value.[25,60,61] In some cases the treatment recommended is 5 pints of milk every 24 hours by drip feed. Where this is not practicable the therapy advised is a mixture of ½ oz. of olive oil and ½ oz. magnesium trisilicate in 8 oz. milk given on alternate hours between the main feedings.[59]

The removal of all foci of infection is also an important principle in the treatment of peptic ulcer.

Prevention of Recurrences

The second and most difficult aspect in peptic ulcer therapy is the prevention of recurrences. This is the most discouraging and characteristic phase of the condition.

Subtotal gastric resection appears to be the method of choice of most surgeons for the prevention of such recurrences. In such operations the mortality rate is not higher than 4 per cent when performed by skillful surgeons.[2] Such an operation failed to give partial or complete relief in only 12 per cent of 1,472 patients reported by several workers. However, in one of this group only 43 per cent were completely free of symptoms according to a survey of the entire group.[2]

Supradiaphragmatic vagotomy has shown some encouraging results but its evaluation cannot as yet be made. The cephalic phase of gastric secretion is abolished by it and the nervous pathway involved in the production of psychosomatic abnormalities hypothetically concerned with the production of gastric or duodenal ulcer may be severed. Unfortunately this operation does predispose to achalasia of the cardiac sphincter, gastric atony and retention. The inhibitory motor and vasoconstrictor action of the sympathetic innervation is uninhibited as well. In rabbits, gastric ulcers may then occur if rough food is eaten and this may also be the case in humans. Alcoholic beverages are not prevented from producing gastric secretion due to the fact that alcohol is thought to act by stimulating the formation of histamine. The effect of smoking on the stomach is believed not to be affected.[2] Of course no type of destructive surgery is desirable if it can be avoided.

Since most ulcer patients will not adjust their habits so as to live a quiet and calm life and maintain a strict management regimen and will usually take a medicine when they arise or before they retire it is necessary to develop some substance which prevents recurrences despite the idiosyncrasies of the patient. Recurrence of ulcer could probably be prevented if a substance were found which would increase the resistance of the gastric and duodenal mucosa to injury or which would increase its healing potential. It might also be possible to prevent such recurrences by abolishing the formation of acid provided the substance used had no side reactions.[2]

Thus far no such substance has been definitely established although the synthetic antihistaminics and atropine-like compounds have been studied. It is hoped that some substance will be found which will block the mechanism by which the parietal cell forms hydrochloric acid since this mechanism is very specific for the parietal cell.[2]

Enterogastrone and Urogastrone

The gastro-intestinal autocoids have attracted the interest of physiologists since Bayliss and Starling discovered secretin in

—*Continued on page 28*

The Evolution of Inguinal Hernia Surgery

IX

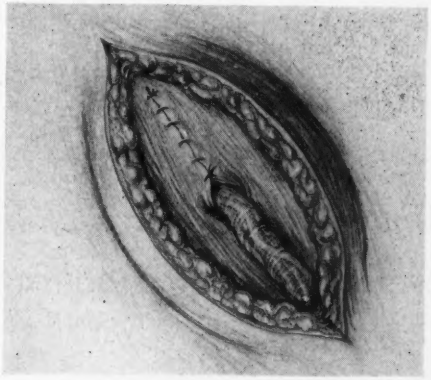
The work of Lewis L. McArthur, of Chicago, on the use of living tissues in the repair technics of hernia, was originally announced by him in 1901, in the Section on Surgery and Anatomy of the American Medical Association. His "autoplastic sutures" were obtained in the following manner: The tendinous aponeurosis of the external oblique was split from the external ring to the commencement of its muscle belly in the usual manner, except for some lengthening. From the cut edges of this, by carefully paralleling its fibers, two strips of living tendon were secured averaging four to five inches in length with which the structures to be apposed could be sutured.

Since the use of such sutures can be adapted to any of the recognized procedures for the radical cure of hernia we have omitted illustrations. McArthur, in his paper published in 1904 [*J.A.M.A.* 43:1039 (Oct. 8) 1904], says "In this group of cases I have naturally included operations done by all the usual methods, because desirous of trying its applicability to them." The group consisted of 93 cases.

From the microscopic studies included in this paper McArthur concluded that his living sutures occasioned much less reaction than other kinds, as judged by round-cell infiltration and other criteria. He thought his experiments seemed to prove that they could live without absorption, remaining "to offer permanent resistance to future stretching."

* * *

A. C. Scott, in 1919, after thirteen years of study and effort, described a technic which he believed overcame some of the disadvantages of the Bassini operation [*Texas State Journal of Medicine* 15:5 (May) 1919].tHe first proceeded as did Bassini, stitching to the sheiving portions of Paupart's ligament the margin of the internal oblique and transversalis muscles and the conjoined tendon, taking care to hold the cord with the index finger snugly up against the upper and outer angle of the wound, while placing the uppermost suture close enough to fit snugly but safely near the cord, virtually making a new inguinal ring at a higher level than normal. He gauged the size of this ring by the tension about the tip of the finger and by



The old external ring is closed as in the Halsted operation and the aponeurosis is sutured from that point half way up toward the internal ring. The cord is placed upon the closed part of the aponeurosis which is now sutured over the cord as it passes out of the internal ring. By this method the external inguinal ring is placed fully an inch above the old one and the tissues beneath the cord are made doubly strong in the lower half of the wound.

the size of the cord and the strength of the muscular border. At the lower part of the wound, in order to relieve tension and achieve safe approximation, he placed his sutures in the margin and superficial tissues of the conjoined tendon and then incised the dense fascia on its surface for an inch and one-half or two inches along its junction and reflection to the underside of the rectus muscle, permitting its surface to slide toward Poupart's ligament. With these exceptions, the first line of sutures were placed exactly as in the Bassini operation. With the cord still held out of the way, the old external ring was closed as in the Halsted operation and the aponeurosis sutured from that point half way up toward the internal ring. The cord was placed down upon the closed part of the aponeurosis, which was then sutured over the cord where it passed out of the internal ring. This brought the cord out of the abdomen obliquely. To fortify against undue tension upon the cord a nick was made in the aponeurosis at the inner border of the new external ring, now fully an inch above the old one, with the tissues beneath the cord given double strength in the lower half of the wound. In gauging the size of the external ring and its tension upon the cord the index finger was again the guide. Sometimes, in order to prevent the fibers of the aponeurosis from spreading at the upper margin of the new external ring, a narrow strip of aponeurosis about two inches long was taken from a point an inch to the inner side of the hernial opening and woven across the upper margin of the opening in the aponeurosis constituting the new ring. At other times the chromic catgut suture holding the aponeurosis together at the upper margin of the new ring was woven out on the side in which the nick was made.

Out of 543 operations done by this method between 1905 and 1919 Scott was able to trace only 5 relapses, or slightly less than one per cent.

Vitamins in the Practice of Surgery (Development and Application)

IV*

The usual liver preparations employed in pernicious anemia do not contain vitamin A, so that fresh liver has to be administered if the vitamin A blood level is too low. As mentioned, the intake of the fat-soluble vitamins, A and D, ensues with that of the fat. Disturbances of fat resorption from intestinal, liver and biliary duct diseases retard vitamin resorption and inhibit conversion within the embarrassed liver. Since fat resorption occurs only in the presence of bile, the same conditions prevail in cases of common duct obstructions and pancreatic disease. The A levels are low. In liver and gallbladder operations our patients present not only damaged livers, but their vitamin supplies have been depleted for shorter or longer periods of time, and continue so, after the surgery has been done. It seems rational, therefore, to administer the vital factors preoperatively, but that has not been entirely possible, until now, when injectible material is available. A routine common duct drainage should be avoided, if possible, or the bile returned to the intestine, as recommended by Schoene.

The deleterious effect of a lack of vitamin A upon epithelical structures in relation to biliary and urinary stone formation has been an interesting question for years.

* Part IV of a series, being some notes made by the late H. A. H. Bouman, M.D., F.A.C.S., of Minneapolis, Minnesota.

The work of Osborne and Mendel in 1917 has been confirmed and added to by many authors. Higgins' observations extended over 250 days. A great percentage of animals fed vitamin A-free rations showed bladder and kidney stones. Urinary infection was present in 30 days and the kidneys were also involved in from 60 to 90 days. The urine was always alkaline. If the positive animals were fed cod liver oil, the urine became acid. New stone formation ceased, and the stones (calcium phosphates) were slowly resolved by A administration in the form of cod liver oil. Higgins believes that the damaged epithelium gives rise to irritation and local lesions producing fibrin and mucin. Snapper of Amsterdam has shown that these form the labile colloids, which allow easy precipitation of insoluble salts. With the epithelium intact stable colloids form from nucleic and chondroitin-sulfuric acids and they may be assisted by giving salicylates. Snapper states that calculogenesis and concrement growth may be inhibited by stabilizing colloids. Based upon experimental findings Higgins of the Cleveland Clinic gives a teaspoonful of cod liver oil 3 times a day. If the urine does not become acid he adds acidifying remedies. That is considered protective treatment. There is some evidence of stone resolution, which is not generally accepted. Fromme bases his theory of stone formation upon an unphysiological distribution of vitamins A and D. He has observed many vigorous young men with kidney stones whose diets had been unquestionably correct as to deficiencies. They were deeply bronzed all over the body from excessive exposure to the sun. The vitamin A blood level was low from the effect of the ultraviolet rays and the vitamin D greatly increased from radiation of the skin.

Diseases of bone with a primary bony necrosis, as Paget's semilunar malacia, Perthes's, Koehler's and Schlatter's disease have a common pathological origin. Fromme states that these morbid processes arise in locations of heightened stress, where increased cell degeneration demands greater regeneration. If these two processes do not keep pace because of some general illness, inferior bone is formed, and disease with aseptic bony necroses results. By systematic determination Scheider has discovered that all these conditions have a low vitamin A level in common. Fromme argues that because of heavy consumption of vitamin A in the particular localities there exists a marked "local" A-hypovitaminosis.

The antihemorrhagic fat-soluble vitamin K (Dam-Schoenheyder) is employed in icteric patients to insure against postoperative hemorrhage. It is derived from alfalfa and from the residue of fish meal, and has been produced in pure, injectable form very recently. Very great work has been done on this vitamin and it continues to make great strides.

—to be continued

HORMONAL THERAPY

—Concluded from page 8

ployed both the estrogen and Amphojel and in the female, except in the aged, we have used the aluminum hydroxide gel alone. In conjunction with this regimen we routinely employed 0.25 per cent acetic acid as the irrigating fluid and we find that this keeps the catheters and bladder completely free of incrustation with urinary salts.

Conclusion

This presentation of hormonal therapy in urological practice is elementary with the specific purpose of presenting some practical therapeutic points which we have found valuable. The theoretical and controversial aspects have been avoided to reduce confusion and avoid the necessary length which would otherwise ensue.

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801 HEYBURN BUILDING

CANCER

Serial Surveys of Current Concepts and Activities

Department Edited by

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"Stump Cancer" II

In 1945 Meigs (10) published five reasons for the treatment of cervical cancer with surgery: "1. If the cervix has been removed, there is no chance for a recurrence in it. 2. If the cervix has been removed, no cervical cancer can regrow in it as a recurrence. 3. Certain cancers of the cervix are radiation resistant, a fact proved at the Pondville Hospital, where multiple biopsies are performed at the time the x-ray and radium treatments are being carried out. 4. There will be less damage to the bowel if surgery is undertaken instead of radiation. Lately, forty-six cases of serious bowel injury have been found in our clinics. 5. From the work of both Bonney and Taussig it is obvious that patients with lymphnode metastases can be cured with surgery in some instances; and this author believes it is not possible to cure, with radiation alone, cancer in lymphnodes deep in the pelvis."

The report is based on a study of sixty-five cases of "real and easily visualized cancers." The patients selected for surgery should preferably be less than 50 years of age and in good physical condition. "It is important that they be thin. Obese women should not be chosen. "The tumor may involve the cervix in part or entirely; it may advance upon the vaginal walls to not over 1 *cm.* from the cervix." The cervix should be movable both by vaginal and rectal examination. Iliac, ureteral or obturator lymphnodes that are palpable are not contraindications to surgery if the other reasons are satisfactory. However, distant metastases or isolated metastases in the vagina are contraindications. If pyelographic studies show a dilated ureter but the lesion otherwise seems operable, the patient should be given the benefit of surgical treatment because such treatment may result in cure if it is due to the presence of an enlarged lymphnode.

Damage to the ureter and consequent ureterovaginal fistula is the only really serious and annoying complication. In this series of sixty-five cases there were eight cases of this complication (12.0 per cent). In two of these cases subsequent nephrectomy was necessary; in one the fistula was still patulous; and in one the patient died. Four of the fistulae were healed (50.0 per cent of patients with fistulae).

Metastatic lymphnodes were present in twelve of the cases (18.4 per cent). Seven of the patients with such lesions are living (58.3 per cent). If these cases had been treated with radium it is the opinion of the author that all of them would have died.

Meigs also believes that "properly selected cases, operated upon by the Wertheim-Clark technique and cared for with modern surgical preoperative and postoperative methods, may improve the results in cervical cancer."

Ten years before Meigs' article was published, Farrar (6) said that total abdominal hysterectomy had been performed by many surgeons with a mortality as low as, or lower than, that found in subtotal hysterectomy. It should be the operation of choice for benign conditions of the uterus necessitating hysterectomy.

James E. Davis and David B. Cheek (5) have found that between January 1, 1938, and July 1, 1945, eighty-seven patients from the Department of Gyne-

cology of the Johns Hopkins University and Hospital applied for diagnosis and treatment on account of bleeding from the remaining cervix after subtotal hysterectomy. Of these cases forty were found to have cancer of the stump (46.0 per cent) and forty-seven had no cancer (54.0 per cent). The authors conclude that "bleeding from the cervical stump after a subtotal hysterectomy should be investigated. . . . Regardless of a history suggesting the presence of menstruating endometrium, regardless of the appearance of the cervix, and regardless of estrogen therapy, every patient who has vaginal bleeding at any time after a subtotal hysterectomy deserves a biopsy of the cervix and a gentle curettage of the cervical canal."

Siddall and Mack (13) from the Harper Hospital (Detroit), in a contribution published in 1935, stated that the danger of carcinoma developing in the stump of the cervix after subtotal hysterectomy is seemingly not sufficiently great to justify the additional risk of the total operation, except in a few instances. The mortality from subtotal hysterectomy varied from 1.2 per cent to 4.47 per cent in 7,795 cases reported by several writers. The mortality from total hysterectomy varied from 1.3 per cent to 4.72 per cent in 4,559 cases reported by the same authors. In Harper Hospital, from 1928 to 1932, 1,141 subtotal hysterectomies and 235 total hysterectomies were done. The postoperative mortality of the subtotal cases was 2.6 per cent and of the total cases 6.4 per cent.

In 1936 there is a contribution by Scheffey (12) from the Gynecological Service of Dr. Brooke M. Anspach at the Jefferson Medical College Hospital (Philadelphia). From September 1, 1921, to September 1, 1935, there were 5,433 admissions. In this group there were 273 cases of carcinoma of the cervix (5.02 per cent). During the same period ten patients with carcinoma of the cervix had had a previous subtotal hysterectomy (3.6 per cent). On the other hand, of 697 patients in whom supravaginal hysterectomy was done for uncomplicated fibromyomata, fibromyomata complicated by inflammatory pelvic lesions, or for chronic pelvic inflammatory lesions not complicated by fibromyomata, there were fourteen postoperative deaths. In a postoperative follow-up clinic 554 of the remaining 681 patients have been traced. Carcinoma of the cervical stump has occurred in five of these (0.9 per cent).

Of the ten patients with stump cancer seen in the series of cases reported by the writer, three probably had carcinoma of the cervix which was overlooked at the time of the supravaginal hysterectomy. In two cases, while questionable, it is quite possible that carcinoma of the cervix was overlooked at the time of the supravaginal hysterectomy. In five cases the stump cancer was not discovered until six, seven, nine, ten, and twenty-one years respectively after the hysterectomy.

Of the ten cases of carcinoma of the cervical stump, three are alive and without recurrence eight years after treatment, one four years, and one two years. Three of these five living patients were treated with radium alone, and two with radium and roentgen irradiation.

The likelihood of cancer of the cervix developing after subtotal hysterectomy may be reduced and in many instances prevented by careful inspection and biopsy of the cervix, with subsequent cauterization, trachelotomy or trachelorrhaphy before the hysterectomy is done.

In 1938 Erle Henriksen (7), from the Gynecological and Obstetrical Department of the University of Southern California (Los Angeles), reported that in a series of 6,550 subtotal hysterectomies there were 157 cases of subsequent disease of the cervical stump. In twenty-six of these cases the lesion was reported to be cancer (16.5 per cent of the cases of disease of the cervical stump and 0.39 per cent of the entire number of subtotal hysterectomies). He was of the opinion that the exceedingly low incidence of stump cancer following subtotal hysterectomy is not sufficient reason for routine employment of total hysterectomy. The ideal procedure in most cases includes the proper conservative care of the cervix before removing the body of

the uterus, followed by periodic postoperative examination of the stump.

In 1939 Hyams (8) reported four cases of fibromyoma of the cervical stump from the New York (N. Y.) Postgraduate Hospital in the last eight years, during which 1,800 supravaginal hysterectomies had been done. The author advises prompt surgical removal for such growths following subtotal hysterectomy.

In 1941 George Gray Ward (15) published a paper entitled "Cancer of the Cervix following Supravaginal Hysterectomy." The author is of the opinion that total hysterectomy is preferable to the subtotal operation. However, the postoperative mortality is higher in the former than in the latter. Furthermore, if a subtotal operation is considered, a careful study of the cervix should precede the operative interference, and a careful follow-up should be carried out.

Also in 1941, Pearse (11) analyzed 794 supravaginal hysterectomies done on Negro patients and 449 on white patients in the Duke Hospital (Durham, N. C.). Between July 1930 and July 1940 there were three cases of stump cancer, one in a white patient and two in Negro patients. However, only about 25 per cent of the 1,243 patients had been checked by follow-up examinations.

In 1943 Tyrone and Weed (14) found, after a study of the case records of 293 cases in which subtotal hysterectomy had been done in the hospitals of New Orleans and the Tulane University School of Medicine, between 1931 and 1941, forty-four in which there was postoperative disease of the cervical stump (15.0 per cent). In three of these forty-four cases the lesion was found to be cancer (6.8 per cent).

In 1943, also, Knight (9) reported that from January 1927 through April 1943, 406 primary squamous cell epitheliomata were seen on the gynecological service of the Sloane Hospital for Women (New York, N. Y.). Of these 406 cases, seventeen were early superficial lesions. In ten of these the diagnosis was made from the study of curettings from grossly normal appearing cervices in patients with fibromyomata or chronic inflammatory changes. In two instances minute gross lesions of the cervix were interpreted as papillary erosions, and in two others the cancer originated in cervical polypi. In eleven cases irregular intermenstrual bleeding sent the patient for examination. In the other six, profuse menstrual bleeding, abdominal mass, and dysmenorrhea were the chief complaints. In eleven of the cases carcinoma was *unsuspected*. Other complicating pathological changes included two polypi and nine fibromyomata. The average length of time during which symptoms had been present was 14.2 months. The author concludes that these cancers often originate in tissue which has undergone squamous metaplasia. They develop slowly over a long period of time; but they "should be treated as vigorously as the more obvious epitheliomata" either with irradiation, surgery, or both.

This review is based on reports in the periodical *Medical Press* of a little over nine thousand cases of cancer of the cervix, with an incidence of stump cancer of 119 cases, or 1.3 per cent. The claim is made, by Henriksen (7), that the incidence of cancer of the stump is so small that it ought not to influence the gynecological surgeon in his decision to do a subtotal in preference to a total hysterectomy. We are impressed with the reasoning of Meigs (10), "If the cervix has been removed there is no chance for a recurrence in it." So it appears that the total operation is preferable if the patient is under 50 years of age, and thin, and has not wasted months with douches, etc.

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GENERAL PRACTICE

American Academy of General Practice

Members in forty-two states, the District of Columbia and Hawaii have been enrolled in the newly formed American Academy of General Practice, according to a statement recently issued by Dr. Paul A. Davis, Akron, Ohio, president of the Academy. Applications are being received at the rate of nearly 100 a week at the headquarters of the national association of general practitioners of medicine and surgery, temporarily located at 20 North Wacker Drive, Chicago 6, Illinois. Mac F. Cahal, executive secretary of the American College of Radiology, is serving as general counsel and acting executive secretary of the Academy of General Practice.

Doctor Davis, president, was last year chairman of the Section on General Practice of the American Medical Association. Other officers of the Academy are: Dr. E. C. Texter, Detroit, vice-president; Dr. U. R. Bryner, Salt Lake City, treasurer; Dr. Stanley R. Truman, Oakland, California, secretary.

The American Academy of General Practice was founded June 10, 1947, in Atlantic City, by a group of men who believed that organized effort would best assure the preservation of the general practitioner as the foundation stone of the finest medical system the world has ever known. Numerous small groups of general practitioners throughout the country had organized, but general practice on a national scale had no voice. Therefore, the members and officers of the Section of General Practice of the American Medical Association, meeting out of official session at the San Francisco meeting in 1946, set in motion the machinery that culminated in the founding of the American Academy of General Practice at the 1947 convention at Atlantic City and into which all local groups have been united.

The Academy has no official connection with the American Medical Association except that members must be members of the American Medical Association. The Academy plans to support and cooperate with the A. M. A. in its high ideals and will also support every other group whose aims are unselfish and for the best interests of the public health.

The purposes of the Academy, as set forth in its constitution, are:

1. To promote and maintain high standards of the general practice of medicine and surgery.
2. To encourage and assist young men and women in preparing, qualifying and establishing themselves in general practice.
3. To preserve the right of the general practitioner to engage in medical and surgical procedures for which he is qualified by training and experience.
4. To assist in providing postgraduate study courses for general practitioners, and to encourage and assist practicing physicians in participating in such traiinng.
5. To advance medical science and private and public health.

To be eligible for membership a physician must be engaged in general practice. He must be duly licensed in the state in which he practices, and must be of high moral and professional character. He must have had at least one year of rotating internship at an approved hospital, or the equivalent in postgraduate training. He must have been in general practice for at least three years. (Special consideration is being given by the Membership Committee to military service.) He must have shown interest in continuing his medical advancement by engaging in postgraduate educational activities.

Since its inception the progress in organization has been remarkable. After only three months the membership is larger than all but the two or three largest specialty groups. By stimulating postgraduate study and establishing a standard of quality toward which all conscientious general practitioners will strive, the Academy will promote progress in general practice in much the same way the specialty societies have promoted progress among specialists.

"It seems obvious," says Mr. Cahal, "that high standards and progress among the family doctors, who render at least 85% of the medical care furnished in America, is the most important single goal for the medical profession today. Through the organization of the American Academy of General Practice the means for achieving that goal have been provided."

PEPTIC ULCER

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1902.[62] Although the interest has centered chiefly on the discovery of physiological mechanisms, the diagnostic and therapeutic possibilities of these gastro-intestinal autocoids have not been overlooked. Enterogastrone, an autocoid also known as the peptic ulcer hormone, has received more attention than the others because of its possible value in the prevention of recurrences. It is possible that it may be used in blocking the mechanism of the parietal cell mentioned above. Enterogastrone is produced by the intestinal mucosa in the presence of adequate concentration of fat and sugar in the chyme. It inhibits gastric secretion and motility and when administered by parenteral routes inhibits or abolishes the gastric secretory response to histamine. When tested on dogs this substance was found to provide some resistance to ulcer formation which lasted for some time after therapy had been stopped.[63] When given parenterally for three months some protection was also provided. Extract from muscle had no protective action but an extract from human urine was found to provide protection and enduring resistance.[64]

More recently an oral preparation of enterogastrone has been produced and when administered in doses of 8 to 16 Gm. caused no untoward effects. A transient local reaction at the site of the injection usually occurs and occasionally a mild generalized systemic reaction takes place when it is administered intramuscularly. Further purification of the compound as well as observations over a period of years of its effect in peptic ulcer are necessary before any conclusions can be reached.

The substance derived from urine is known as urogastrone or gastric secretory depressant (G. S. D.). In those cases in which this therapy was used results were much the same as those treated with alkalies and maintained on a strict diet. A less strict diet was prescribed for these cases without untoward effects and the tendency to recurrence was much less.[65]

Clinical investigation of enterogastrone with humans is being carried on and the results thus far have shown great promise. However, no conclusions have been reached other than that this method of prevention of recurrences is worthy of further study. The approach to the problem which shows the greatest promise is the search for a substance which will increase the resistance of the mucosa to injury and will completely block the parietal cell.[2]

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FOREIGN LETTER

Rheumatism Research Goes Ahead in Britain

Oxford, Dec. 15, 1947

The increasing emphasis of modern medicine on such conditions as rheumatism, neuroses and suboptimal nutrition reflects the progress of our science. Except in a very small percentage of cases these disorders do not kill; they are not communicable and so never cause epidemics; they have little or no effect on the actual span of life. But they do cause intense pain and disability to the individual, suffering to the family, and disorganization to the factory.

Medical research in the past 100 years has concentrated its vast energy on the conquest of diseases such as pneumonia, syphilis, smallpox and typhoid. With the discovery of vaccines, antibiotics and sulfonamides, such diseases have been fairly well dealt with and relegated to a minor importance. The natural result of these advances has been a prolongation of the life span. In Britain today, the average life expectancy of the population is more than 60 years. But following this increased length of life, other conditions such as cancer, high blood pressure and heart disease have assumed the role of killer. In keeping with this, further large schemes of medical research have been developed to combat them.

It is only in the last two decades that there has been any real concentration on the illnesses which incapacitate rather than kill. In this respect medicine works increasingly in harmony with the sociologist and factory manager.

Effect Of Damp Climate

In England, more than other countries, because of the damp climate, the word rheumatism is in common use. The child complaining of "growing pains," the worker with a severe backache, the housewife with "sore hands," the old woman hobbling on a cane—all complain of "rheumatism." But what in fact is rheumatism?

The doctor finds rheumatism harder to define that the layman because, as in many young sciences, the number of facts seem to overshadow the underlying principle. So far, it is safest to describe rheumatism as a disorder of the muscular or skeletal system which causes pain and limitation of movement—and whose causes are still obscure.

When the International League Against Rheumatism attempted to classify the rheumatic disorders, they went through 60 varieties of nomenclature until they could decide on an all-inclusive one. This has been improved upon by many organizations and particularly by Britain's Royal College of Physicians, but for purposes of description we shall use the former method. This simply divides rheumatism up into disorders which affect joints and are called arthritis, and those which affect muscles, tendons and soft parts of our motor system and are called non-articular rheumatism.

Arthritis is not always the terrible thing which the layman imagines. For example, the arthritis which accompanies rheumatic fever is fleeting, and osteo-arthritis, the one which affects old people, can be alleviated if properly treated. Arthritis due to gonorrhea, syphilis, pneumonia and other infectious diseases can receive specific treatment which will usually heal it satisfactorily. Rheumatoid arthritis, the true crippling form, luckily affects only a small percentage of people, and even this if treated early and for a long enough time

can be prevented from becoming really bad.

Non-articular rheumatism affects all people and in many ways. It may be seen as a backache after lifting a heavy weight, tiredness after undue exertion, or a severe sciatica which immobilizes people for long periods of time.

Unfortunately there is difficulty in estimating the true number of rheumatic sufferers because a large number still feel that some forms are too minor to justify bothering the doctor. Also the diagnosis of rheumatism is increasingly specialize and requires extensive equipment and experience, a difficulty which is being overcome by the formation of special clinics.

During World War II morbidity surveys have been published at intervals. Samples of the population of Britain were taken so that a representative portion of town and country dwellers, agricultural and factory workers, young and old, were questioned. This survey showed that during one year, 72 out of 1,000 people became temporarily incapacitated to the point of being absent from work, and that 504 persons per 1,000 suffered non-incapacitating attacks of rheumatism.

Occupational Tendencies

There is an association between occupation and the type of rheumatism incurred. If male occupations are roughly divided into agriculture, mining, metal, building, furniture, general labor, clerical and transport, it is found that rheumatoid arthritis is particularly heavy among agricultural workers, rheumatic fever among miners and gout among the building trades.

In women classified as shop assistants, domestic workers, charwomen, laundresses, clerks, cotton mill hands, dressmakers, and restaurant workers, it seems that domestic workers show the greatest percentage of the crippling rheumatoid form and osteo-arthritis. Women as a whole have a greater incidence of arthritis as opposed to non-articular rheumatism than men.

The causes of rheumatism are still largely unknown. Among the factors which cause the disease, infection, allergy, glandular disturbance and heredity are most important. But as more work is done on the pure physiology, it is probable that rheumatism due to these causes, with the exception of the last, will become amenable to treatment. So far as the infective forms of rheumatism are concerned, the present view is that a virus rather than a bacillus is the cause. Another factor related to the incidence of rheumatism is found in psychological stress and poor social conditions.

At a large London clinic, attacks of rheumatoid arthritis were found to be coincidental with environmental upsets exemplified by overtiring work, money worries, illness, a death of one of the members of the family, bombing during the air raids of World War II and poor living conditions. In northern climates, especially where the atmosphere is damp, poor housing often leads to attacks of rheumatism, and the incidence is in fact much larger in cold than warm parts of the world. Naturally World War II, with its attendant hardships, has increased the amount of rheumatism in Britain.

Twenty years ago Britain's Ministry of Health published the "Practitioner's Enquiry," which was the first attempt to ascertain the prevalence of rheumatism among insured workers. Statistical data have accumulated since then, aiding the physician in understanding the magnitude of the problem.

In 1936, the Empire Rheumatism Council was formed. This body set out to help impress on the public and the medical profession the urgency of dealing with rheumatism. It raised large amounts of money and composed the first rheumatism council to advise the College of Physicians in London on rheumatic diseases. It founded two research laboratories which unfortunately have been either destroyed or taken over by the war services during the last seven years.

Nuffield Foundation Gift

At the same time several universities have allocated space and equipment for dealing with rheumatism. Special clinics under academic guidance exist in London,

Edinburgh, Bristol and Manchester. Recently the Nuffield Foundation gave 100,000 pounds to Manchester for further research on rheumatism. Here young physicians will be financed while being trained in the diagnosis and methods of treatment currently in use in Britain and other countries.

The new Health Bill provides still further scope for the treatment of rheumatism. In the various regions, clinics will be set up under expert guidance, with the necessary equipment, bed space and sanatorium facilities.

More important is the emphasis on cooperation between the regions and the universities, so that intensive research can be carried out at the same time that treatment continues. Local Government bodies have already expended great amounts of money on facilities for the treatment of rheumatism, but this will now be incorporated into one wider and more embracing scheme. An example of this is the clinic provided by the London County Council which today carries out about 80,000 treatments per year.

The Rheumatism Council and the entire British medical profession fully realize that excellent work is being done on this problem all over the world. Already the worldwide cooperation of doctors is established by conferences, journals, and exchange of students. It is in the interest of every country to have a neighboring people who are productive and healthy; the abolition of epidemics is no longer enough. The exchange must continue and the Colleges of Physicians and Surgeons, the Empire Rheumatism Council and other organizations will continue their efforts along these lines.

B. TANNER, M.D.

PEPTIC ULCER

—Concluded from page 28

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CONTEMPORARY PROGRESS

MEDICINE

Use of Colloidal Iron Hydroxide for the Treatment of Hypochromic Anemia

R. C. Batterman and associates *(American Journal of Medical Sciences,* 214:268, Sept. 1947) report the use of colloidal iron hydroxide in the treatment of hypochromic anemia. In one group of 6 patients who had been under observation for prolonged periods, the effect of ten to eleven days' treatment with colloidal ferric hydroxide was observed. It was found that with a dosage of 75 to 150 mg. three times a day, the utilization of iron was equivalent to that obtained with 200 to 400 mg. of ferrous sulfate. In another group of 6 patients, the effects of prolonged administration of colloidal ferric hydroxide were studied; 4 of the patients showed a satisfactory response to a total dosage of 225 to 450 mg. (only one of these patients requiring 450 mg.); the other 2 patients required a dosage of 675 mg. daily before there was a rise in hemoglobin. Similar results had previously been obtained with ferrous sulfate in equivalent dosage. In a group of 107 patients, none of whom had any gastrointestinal disease, either ferrous sulfate or colloidal ferric hydroxide was given for ten to thirteen days, unless gastrointestinal upsets were so severe as to interrupt the therapy; then after a rest period (usually one week) the other preparation was given. Each drug was given in the form of 1 to 2 tablets three times daily one hour after meals, the dosage of colloidal ferric hydroxide being 75 to 150 mg. three times daily and that of ferrous sulfate, 200 to 400 mg. three times daily. The incidences of symptoms of gastrointestinal irritation with ferrous sulfate was approximately twice that with colloidal ferric hydroxide. The symptoms were also milder with the colloidal preparation; vomiting and abdominal colic did not occur in any case. On the basis of these studies the authors conclude that colloidal ferric hydroxide satisfies the requirements for successful iron therapy of hypochromic anemia, in which iron therapy is essential for hemoglobin production. This colloidal preparation produces a satisfactory hematopoietic response with small doses; its colloidal form makes it soluble in the acid gastric contents and increases its absorbability in the intestines; it is less irritating to the gastrointestinal tract. It has the added advantage that it is of the same chemical nature as the iron that is a normal constituent of food stuffs (iron hydroxide combined with protein).

COMMENT

A substitute for ferrous sulfate, non-irritating to the gastrointestinal tract, would be welcome, especially if it were reasonably priced. ***—M.W.T.***

Observations in Treatment of Hypertension with Rice-Fruit Diet

M. E. Flipse and M. J. Flipse *(Southern Medical Journal,* 40:721, Sept. 1947) report that the use of a rice-fruit-sugar diet was begun by 54 patients with hypertension, but in 14 of these, it was impossible to evaluate the results, either because of the patient's refusal to follow the diet strictly, or because of the development of some complication. In 40 cases in which results could be evaluated, 32 patients were placed on a strict rice-fruit-sugar diet. This consisted of ½ pound of rice or more (dry weight) daily cooked in unsalted water, with fresh, stewed, dried, or canned fruits, including bananas, which were used extensively, fruit juices and corn syrup.

Fluids (water and fruit juices) were not restricted, and were even forced to three quarts daily if there was nitrogen retention. Modification of the diet was allowed when the blood pressure was considered to be stabilized, or sometimes earlier if the patient insisted. Additions to the diet were made in the following order: vegetables less than 10 per cent carbohydrate; lean meat; salt "sparingly"; the daily rice intake was continued. Milk, wheat and eggs were not permitted even when the diet was fairly liberal. Of the 32 patients who followed the diet strictly, 20 showed a satisfactory fall in blood pressure, either a fall in mean blood pressure greater than 20 mm. or a fall of the diastolic pressure to normal, without severe malnutrition resulting from the dietary regimen. Of these 20 patients 14 were placed on the modified diet, and 10 maintained their improvement, while 4 showed an increase in blood pressure. Of the 10 patients who maintained their improvement on the dietary regimen, 3 were given additional treatment in the form of potassium sulfocyanate. Of the 12 who failed to show a satisfactory drop in blood pressure, one had a moderately severe uremia, which cleared up completely, and normal renal function was restored; 2 others showed a marked fall in blood pressure, but the diet resulted in severe malnutrition; in most of the other cases, failure resulted from the patient's inability to continue the diet for a sufficient length of time. In those who showed improvement under the regimen, the improvement was evident within six weeks; there was no relation between weight loss and the fall in blood pressure. Eight patients were placed on a modified diet at the beginning of the treatment; in most of these cases the blood pressure was "borderline" and other forms of therapy were frequently used; the diet helped in most instances to stabilize the blood pressure at normal levels. Many patients find difficulty in following the rice-fruit-sugar diet strictly, which accounts for a considerable percentage of failures. In some cases patients do not take their full caloric requirements, and malnutrition results that makes it necessary to discontinue the regimen.

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COMMENT

It would seem wise to treat each patient individually with diets of this kind, especially since some patients become quite weak on a rigid regimen. Apparently some do well on a strict diet and continue to do well.
—M.W.T.

Insulin Mixtures: An Evaluation of Their Use in 150 Cases

W. S. Collens, L. C. Boas and J. D. Zilinsky (*American Journal of Medicine*, 3:155, August 1947) report the use of mixtures of unmodified insulin and protamine insulin in a single daily injection. Previous investigators have found that such insulin mixtures possess some of the characteristics of both quick acting unmodified insulin and long-acting protamine insulin. The mixtures most frequently used have been mixtures of 2 parts or 3 parts un-

modified insulin to 1 part protamine insulin. But in their study of 150 patients, the authors found that neither of these mixtures gave adequate control of all cases of diabetes. In their series the ratios employed varied from 1 part to 5 parts unmodified insulin to 1 part protamine insulin. In all cases patients were instructed in the method of preparing the mixture for each dose at the time of injection, and were not permitted self-administration until they had learned the technique. The patients in this series were under observation for a period of two years. The diabetes was considered to be adequately controlled if glycosuria was minimal, the blood sugar was as near normal as possible and the patient was in a satisfactory nutritional state and clinically well, without hypoglycemic reactions. It was found that 79 patients (53 per cent) were satisfactorily controlled by the 2:1 mixture of unmodified insulin and protamine insulin; 15 by a 2½:1 mixture; 14 by a 3:1 mixture, and 4 by a 5:1 mixture; 15 patients were controlled by 1:1 mixture and 14 by a 1½:1 mixture. A study of these cases did not show any relationship between the severity of the disease (as determined by the total insulin requirement) and the mixture required to control the disease. When patients were transferred from separately injected insulins to the insulin mixture, the incidence of hypoglycemic reaction was reduced; with the single injection of the insulin mixture before breakfast, reactions are most liable to occur six to eight hours later and can be prevented by supplementary feeding at the sixth hour. Most patients reported an improvement in well-being with the use of the insulin mixture. It was found necessary, however, to discontinue the mixture temporarily and employ separately injected insulins during severe infectious and in pregnancy.

COMMENT

It would seem advisable not to attempt definite ratios for all patients, but rather to ascertain by experience which one would be best for the individual patient.

—M. W. T.

Enhancement of Blood Levels by Caronamide During Intramuscular Administration of Penicillin

A. O. Seeler, C. Wilcox and M. Finland (*Journal of Laboratory and Clinical Medicine*, 32:807, July 1947) report a study of the effect of the oral administration of caronamide on the blood levels of penicillin during the intramuscular administration of penicillin. The subjects of this study were male hospital patients most of whom were being given penicillin during convalescence from various infections. There was no impairment of renal function in any of these patients. In all cases the penicillin injections were given at eight hour intervals, and caronamide was given by mouth every four hours for twenty-four to forty-eight hours. When 100,000 units of penicillin were given every eight hours and 2 gm. of caronamide every four hours, the administration of caronamide did not significantly increase the penicillin levels in the blood in patients under sixtiy years of age, but in patients over sixty years of age the penicillin levels in the blood were definitely increased by this dosage ofcaronamide, at the four, six and eight hours periods after the injection of penicillin. In younger subjects a dosage of 4 gm. of caronamide every four hours was necessary to increase the penicillin levels in the blood at the same periods. Increasing the dosage of penicillin to 200,000 and to 300,000 units increased the peak levels of penicillin in the blood in both age groups, but did not prevent the more rapid disappearance of penicillin from the blood in the younger age group. The administration of caronamide, however, did not markedly increase the peak levels of penicillin in the blood, but slowed the rate of fall of the penicillin levels in the blood in both age groups. Except at the time of peak levels, patients receiving 100,000 units of penicillin and caronamide showed higher levels of penicillin in the blood than those receiving 300,000 units of penicillin without caronamide. In both age groups, this difference was greatest six hours after the penicillin injection. No toxic effects of caronamide were noted in any case.

OBSTETRICS

Penicillin and Acute Puerperal Mastitis

C. P. Hodgkinson (*American Journal of Obstetrics and Gynecology*, 53:834, May 1937) reports 73 cases of breast infection, most of which developed in the postpartum period, but 7 were not true instances of puerperal mastitis. In the group of typical puerperal mastitis cases, 18 had developed an abscess when first seen; incision and drainage were necessary in 16 of these cases, while 2 cleared up after aspiration. Forty-eight patients were given intramuscular injections of penicillin during the cellulitis phase of the mastitis, and this resulted in complete recovery in every case. The usual dosage of penicillin was 25,000 Oxford units every three hours for seventy-two hours, then 15,000 units every three hours for another forty-eight hours. Although symptoms were completely relieved in sixty hours, the full five-day course was usually given. Although penicillin was demonstrated in adequate concentration in the blood of these patients, it was not demonstrated in the milk. If the patients were nursing their infants, lactation was inhibited by the usual methods, including the use of diethylstilbestrol. In 3 of the early cases, in which this was not done, there was a recurrence of acute mastitis in the opposite breast in about two weeks. Since lactation has been inhibited routinely, there has been no reactivation of infection after penicillin therapy. Before penicillin became available, 12 patients were treated during the cellulitis phase of mastitis with various sulfonamides, in adequate dosage, but 9 of these patients developed an abscess requiring incision and drainage. The chief objection to penicillin therapy is that it requires hospitalization for frequent injections. To overcome this objection, the oil and wax penicillin preparation of Romansky and Rittman was used in 4 cases of puerperal mastitis, giving one injection of 300,000 units every second day until three injections had been given. The patients were not hospitalized, and the results were as satisfactory as with the three hourly injection method.

COMMENT

Truly postpartum acute mastitis is the obstetrician's dilemma. Nothing is more hazardous for good patient-doctor relationship. "You are a god before its occurence: the Devil afterwards." Consequently prevention is highly desirable. This, we know, is not always possible no matter how meticulously a good routine is followed. Once the infection has entered, the quicker penicillin is given the better the prognosis. Our results hove been amazingly good with penicillin in the few cases we have had in the past two or three years. We "bend over backwards" in the prevention of mastitis and as a consequence we see very few cases. Prevention is better than cure and besides keeps the patient thinking you are a "good doctor."

—H.B.M.

The Management of Ovarian Tumors Complicating Pregnancy

H. C. Falk and I. A. Bunkin (*American Journal of Obstetrics and Gynecology*, 54:82, July 1947) report 12 cases of ovarian cysts complicating pregnancy, 7 of which were dermoids and 2 of these bilateral. If an ovarian cyst is discovered early in pregnancy, oophorectomy can be safely done under inhalation anesthesia, preferably cyclopropane. As the ovary involved may contain the corpus luteum of pregnancy, it is best to delay operation until the placenta has "superseded" the corpus luteum, about the sixteenth week. If, however, some complication develops, such as torsion of the pedicle or impaction of the uterus below the pedicle, early in pregnancy, operation must be done promptly; in such cases, progestin is given before operation (at least 5 mg. intramuscularly each day). In 4 of the authors' cases operation was done by or before the sixteenth week of pregnancy. In one of these cases operation was done at five weeks because of signs and symptoms of torsion of the pedicle; bilateral tumors were discovered and removed, the patient made a good recovery, and was seven and a half months pregnant at the time of this

report. In the other 3 cases, operation was done at sixteen weeks; all of these patients were delivered spontaneously at term. In one of these cases bilateral dermoids were present; oophorectomy was done on the right side and resection of the cyst on the left side. In the second trimester of pregnancy, operation is indicated as soon as the diagnosis of ovarian tumor is made. None of the authors' cases reported belong in this group. If an ovarian cyst is discovered at or near term, delivery from below may be possible if there is no obstruction. Occasionally if the cyst causes obstruction, placing the patient in the knee-chest or Trendelenburg position may result in dislodging the tumor into the abdomen. If the tumor is immobile, elective cesarean section with removal of the tumor is indicated. In 4 of the authors' cases, elective cesarean section, with removal of the affected ovary, was done at forty weeks. One of these patients died postoperatively, the other 3 made a good recovery, but one of them with dysgerminoma of the left ovary shows "questionable enlargement" of the right ovary one year after operation. If the first symptoms of torsion of the pedicle develop post partum, immediate operation is indicated. Four of the cases reported were of this type. In one of these cases in which premature labor had been induced, the patient died of generalized peritonitis; in one, there were bilateral dermoid cysts, one of which had ruptured, with peritonitis at the time of operation; this patient's convalescence was "stormy," but she finally recovered. In the other 2 cases, recovery was uneventful. In general in pregnant women, the removal of the ovary involved is indicated; this is always true in cases of solid tumor; dermoid cysts, if bilateral, may be "shelled out," leaving small amounts of ovarian tissue.

Comments

The authors have given a very comprehensive outline of what and how to do in cases of pregnancy complicated by ovarian cyst. We agree 100 per cent with all they have said. Every cyst 6 cm. or larger in diameter should be removed as soon as the diagnosis is made if the pregnancy is of 12-14 weeks duration. If the cyst is producing continued symptoms (pain) it should be removed immediately regardless of the duration of pregnancy. This is an important complication of pregnancy and may cause very serious trouble if not handled properly. Study this article; it is excellent. You might have a case tomorrow. ***—H.B.M.***

Late Postpartum Bleeding: A Method of Prevention

H. W. Ewing and H. A. Power (*American Journal of Obstetrics and Gynecology*, 53:101-9, June 1947) have found that even with conservative handling of the third stake of labor, small pieces of placental tissue may be retained, which cannot be prevented or detected at the time of delivery. This, as well as subinvolution of the placental site without retention of any tissue, may be a cause of postpartum bleeding. In cases in which lochia rubra persists beyond the sixth or seventh day, and there is subinvolution of the uterus and low grade fever (99 to 100°F. or slightly higher), the authors have adopted the following routine: On the eighth or ninth postpartum day, a pelvic examination is made. Two fingers, in a sterile glove, are introduced into the vagina; the uterus is usually found to be anteflexed and the cervix patulous. The axis of the uterus is straightened with the examiner's outside hand, so that a finger can be introduced into the open servix; the fundus of the uterus is then pushed down, so that the entire cavity can be explored. As a rule either a piece of tissue or a marked elevation of the uterine wall is felt. Unless there is a marked reaction to this examination, the patient is taken to the operating room on the following day. Under anesthesia, a placental forceps is introduced into the uterus and the tissue grasped and removed with a twisting motion; the uterus is then packed for twenty-four hours. Recently penicillin has been given prophylactically for 48 hours. This procedure has been carried out in 134 cases; only 35 of these patients were afebrile before operation. After operation and removal of the uterine packing, 89 patients were afebrile, 37 had fever in Zone 1 (99 to 100.4°F.), which persisted for only two days in 22 cases and for three days in 9 cases. Eight patients showed a Zone

2 temperature (100.4°F. or above), 3 of whom bled excessively, one requiring hysterectomy. Pathologic study of the tissue removed showed true degenerating placenta in only 10 cases; in the other cases degenerating decidua-like tissue, chronic metritis, chronic interstitial endometritis or necrotic debris was found. This procedure, the authors have found, lessens the period of morbidity and hospitalization, eliminates a potential danger to the patient and "returns the uterus to a healthy state for future pregnancies."

COMMENT

Continued postpartum bleeding is of course very important and this commentator does not believe the authors have violated any "orthodox concepts" in their diagnosis and management of these cases. The management of their third stage may possibly be subject to criticism because one hundred and thirty-four delayed postpartum bleedings requiring evacuation with placental forceps over a ten year period seem far too large a number. In a comparable ten year period at the Methodist Hospital of Brooklyn in 22,848 deliveries there occured only 31 such cases. We have always, regardless of temperature, where there was definite clinical and physical evidence of retained secundines, removed them with placental forceps or sponge holder (never with curet). This is accepted routine. We never pack the uterus—oh! perhaps "once in a million times"—since it is not usually necessary and is a potential, if not actual, source of infection or spread of the already existing infection. We firmly believe and have taught for a long time that ordinarily "an empty uterus does not bleed." Of course there are exceptions, e.g., an atonic or a fibroid uterus or a ruptured uterus. In such cases a diagnosis of the cause of the bleeding should be made. The management of the third stage of labor—hackneyed as this subject seems—still needs to be better understood. We believe that meticulous examination of the placenta, including the membranes, upon their delivery, and uterine "cleansing" (removal of any retained secundines), if indicated at this time, is imperative. We do not fear manual removal of secundines in a good hospital. This routine has practically eliminated late postpartum bleeding or hemorrhage in our hands.

Remember! "an empty postpartum uterus does not usually bleed." Be sure it is empty.

—H.B.M.

Late Pregnancy Toxemia

O. W. Smith and G. Van S. Smith (*Western Journal of Surgery, Obstetrics and Gynecology,* 55:313, June 1947) report the use of a pseudoglobulin fraction of human exudates (PPs) in the treatment of 6 cases of pre-eclamptic toxemia. This treatment was based on previous experimental studies in which it was found that this fraction protects rats against menstrual toxin. The pseudoglobulin factor employed was obtained by processing pleural or abdominal exudates from women with metastatic carcinoma; but other exudates are equally effective if they are true exudates of red blood cells and with a pH of 6.5 to 7.5. The PPs is prepared for injection by dissolving the dry powder in normal saline and passing through a Seitz filter. The animal protective dose (M.P.D.) is determined on immature rats simultaneously given a minimum lethal dose of menstrual toxin. The usual dose is 10 cc. given intramuscularly, representing 20 to 200 minimal protective doses. In the cases of pre-eclamptic toxemia reported, definite improvement followed the administration of PPs, especially reduction of blood pressure, more rapid than that obtained with the usual toxemic regimen, and reduction of albuminuria. In 3 patients the PPs injections were stopped for varying periods of time, and in each instance there was a recurrence of toxemic signs and symptoms, which were again relieved by further treatment with PPs. With further purification and concentration of the protective pseudoglobulin, making it possible to give larger doses, it may be possible to treat more severe cases of late pregnancy toxemia successfully. It was found that the PPs treatment alone does not alter the hormonal abnormality of pre-eclamptic toxemia—the abnormally high serum chorionic gonadotropin and the progressive deficiency of urinary pregnanediol. The function of PPs is to neutralize the toxin; supplementary treatment with diethylstilbestrol in some cases increased secretion of progesterone by better utilization of the chorionic gonadotropin. This indicates that when the toxin is neutralized

or partially neutralized the secretory activity of the placental synctium may be stimulated by diethylstilbestrol as in the non-toxic patient.

COMMENT

The etiology of the toxemias of pregnancy is still unknown. Research workers like the Smiths (Dr. and Mrs.) have gone a long way in clarifying certain aspects of the toxemias but we still do not know the real cause of the toxemia of pregnancy. Their report on this new method of treating the late pregnancy toxemia by the use of a pseudoglobulin fraction of human exudates (PPs) appears to be very promising. This research is to continue and it is hoped a specific for certain types of toxemia of pregnancy at least will be forthcoming. We need more "research Smiths" and plenty of money to finance them.
—H.B.M.

GYNECOLOGY

Radium Therapy of Hemangio-Endothelioma of the Uterine Cervix

H. H. Bowing, R. E. Fricke and J. T. McClellan *(American Journal of Roentgenology,* 57:653, June 1947) report 4 cases of hemangio-endothelioma of the uterine cervix from the Mayo Clinic. Hemangio-endothelioma is a rare type of tumor, but has been reported in many organs of the body; these 4 cases are apparently the first to be reported of hemangio-endothelioma of the cervix. The ages of the patients ranged from thirty-nine to sixty-two years; 2 of the patients were unmarried, and 2 were multiparous. The chief symptom in these cases was bleeding, characterized in those patients who were still menstruating by prolongation of the period and increase in the amount of blood loss. All but one of these patients were treated by deep roentgen-ray therapy, combined with radium in 2 cases. In one case when diagnostic curettage was done, the uterus was found to be very friable, and a panhysterectomy was done; pathological examination showed a chronic metritis and a hemangio-endothelioma (grade I) on the cervix; this patient is living and well five years after operation. In all the other cases radiation therapy resulted in marked palliation, with relief of bleeding and diminution in the size of the tumor. The patient first treated survived seven and a half years with no symptoms of recurrence of the tumor. Death at the end of this period was apparently due to long-standing heart disease. The patient treated with deep roentgen-ray therapy lived about six months after she was first seen at the Clinic; the cause of her death is not known. The fourth patient has survived two years at the time of this report. The results in these cases indicate that hemangio-endothelioma of the cervix is definitely radio-sensitive, as is true of other tumors of endothelial origin.

COMMENT

Hemangio-endothelioma of the cervix is undoubtedly of extremely rare occurrence yet we have seen quite a few cervices, over the years, that might have been the seat of a hemangio-endotheliomatous growth. Unrecognized because we do not think of the uterine cervix as the habitat of angiomatous growths; yet morphologically we may find this type of growth in any organ of the body. This is well known, as for example, as a skin lesion. Do not be misled by the rarity of any tumor. Remember! early diagnosis still offers the only "sure cure" of cancer. Any unusual growth anywhere should be fully investigated and this is doubly important for growth in and about the female generative organs. Eternal vigilance is life saving because it leads to early diagnosis. Be sure! before you pass judgment.
—H.B.M.

Meigs's Syndrome: A Case Report and a Review of Recently Published Cases

H. J. Simon *(American Journal of Obstetrics and Gynecology,* 53:1042, June 1947) reports a case of Meigs's syndrome in which the patient was in an apparently hopeless condition with a large ovarian tumor with severe ascites and hydrothorax. She was unable to take sufficient food and was rapidly losing weight and strength. At operation a fibroma of the ovary weigh-

ing 5,200 gm. was removed, and the patient made a good recovery, gained weight and was in good health (except for hypertension) when last seen, a year and a half after operation. A review of the literature shows 43 cases of Meigs's syndrome reported, making a total of 44 cases, which are tabulated. A special study has been made of the size and weight of the tumor in these cases; the largest ovarian fibroma in this series was reported by Bonze and Kirshbaum (weight 7,150 gm.); this tumor was not removed at operation owing to the poor condition of the patient, who died two days later. In 1941 MacFee reported a case of large multilocular cystadenoma of the ovary with fluid in the abdominal and chest cavities; and in 1945, Millett and Shell reported a case of large multilocular pseudomucinous cystadenoma; in both these cases a thoracocentesis was necessary during the postoperative period. While these authors believed that they were dealing with Meigs's syndrome, their cases are not included in the author's tabulation. He is of the opinion that only solid tumor of the ovary, ascites and hydrothorax should be considered as Meigs's syndrome, because if tumors that are primarily cystic and at least potentially malignant are included, the definite understanding of the benignity of the whole syndrome and of the indication for operation in even apparently hopeless cases will be obscured. In the 2 cases of cystic ovarian tumor mentioned, the chest fluid was not rapidly and spontaneously eliminated after removal of the tumor, as in cases of Meigs's syndrome, but required thoracocentesis. In the author's case the absorption of the pleural fluid was so rapid that the patient developed an overdistended bladder and required catheterization, although voiding urine spontaneously—an unexpected minor postoperative complication; the chest was completely clear of fluid on the fifth day after operation.

COMMENT

The so-called Meigs's Syndrome — solid tumor of the ovary, ascites and hydrothorax —is of very rare occurrence. During thirty years experience, we have never had a personal case although since the day Meigs reported his first case some twenty years ago we have been constantly on the alert for such a case. It is important to keep this syndrome in mind, particularly as regards the hydrothorax, since simple thoracocentesis gives perfect and lasting relief. Do not be misled and regard the syndrome as due to malignancy.
—H.B.M.

Treatment of Pelvic Infections of Genital Origin with Local Injections of Penicillin

A. Sicard and J. Arbid *(Presse médicale,* 55:433, June 28, 1947) report 12 cases of pelvic infection treated by local injections of penicillin; in these cases other methods of treatment including intramuscular injections of penicillin had failed to relieve the symptoms. There were 7 cases of pelviperitonitis and 5 cases of pyosalpinx. In 4 cases of acute suppurative pelviperitonitis, with abscess formation in the pouch of Douglas, repeated aspiration of pus followed by injection of penicillin resulted in cure in only one case; in the other 3 cases incision and drainage of the abscess was necessary. But in the more chronic cases of pelviperitonitis without abscess formation, local injections of penicillin give much better results, with prompt relief of symptoms and clearing up of the pelvic condition. In 5 cases of pyosalpinx excellent results were obtained with local injections of penicillin into the lateral cul-de-sacs. Injections of from 50,000 to 100,000 units were given daily or every other day; the temperature fell as a rule after the first injection, but five to ten injections were necessary to clear up the lesion completely. None of these patients have required any subsequent surgical treatment.

COMMENT

Any antibiotic agent works best given early. Given late after abscess formation antibiotics give relatively poor results. They act through the blood and lymphatic streams and therefore local injection or application has a very limited effect. We do not believe that needle drainage of a pelvic abcess, and the introduction of penicillin in any amounts, can possibly have much effect in eliminating a bacteral infection. In such a case cited by the authors we are of the opinion that the repeated evacuation of pus and "time" cured the patient—not the penicillin. In chronic pelvic inflammatory disease penicillin is of

little or no value irrespective of the method of administration. What a wonderful life saving therapeutic agent penicillin is if the conditions for its use are strictly adhered to, particularly as regards acute pelvic infections. "Miraculous" is the word. May the name of Florey be forever memorialized!

—H.B.M.

The Causes of Death in Cancer of the Cervix Uteri

R. R. DeAlvarez *(American Journal of Obstetrics and Gynecology,* 54:91, July, 1947) reports a study of the cause of death in 55 patients dying with cancer of the cervix. At the time of admission to the hospital, 84 per cent of these patients showed evidence of extension of the carcinoma into the parametria; there was no patient in Group I and only one in Group II. There was only one case in which death could be attributed to an unrelated disease, a case of primary carcinoma of the gallbladder with widespread metastases, in which the cervical lesion was healed at the time of the patient's death. In 40 per cent of the cases, death was due to invasion or obstruction of the urinary tract, usually complicated by secondary infection; in these cases uremia was the most frequent cause of death. Death was due to pulmonary causes in 31 per cent, including massive pulmonary edema, pneumonia from metastatic carcinoma, and pulmonary embolism (during deep x-ray therapy). Death was due to gastrointestinal causes in 13 per cent, usually to intestinal obstruction resulting from invasion of the large bowel by the carcinoma. Carcinoma of the cervix per se is rarely the immediate cause of death; as seen from this study, changes secondary to the primary neoplasm usually cause death. Such procedures as nephrostomy, ureterostomy, colostomy and shunting intestinal anastomoses may not only prolong life but may be life-saving measures if instituted early.

COMMENT

Cancer ranks high among the first three causes of death. In about 25 per cent of women dying of cancer, the lesion is located in the genital tract and the cervix is the primary site of 65 per cent. On the other hand, these malignant lesions are not the immediate cause of death in the majority of cases. Most of these deaths are due to intercurrent lesions secondary to the original neoplasm. We have long recognized that this was true yet very little statistical research had been done to verify this impression—i.e., that cancer per se does not usually kill but that most deaths are due to lesions secondary to the primary growth. This excellent article contains a lot of good information otherwise not easily obtainable—read it. *—H.B.M.*

PEDIATRICS

Combined Immunization Against Diphtheria, Tetanus, and Pertussis in Children Over Three Months of Age

P. A. di Sant' Agnese *(Journal of Pediatrics,* 31:251, Sept. 1947) reports the use of two preparations for combined immunization against diphtheria, tetanus and pertussis in two groups of children. The two groups were similar in regard to age, sex and color; all were over three months of age. The first group was treated with fluid diphtheria and tetanus toxoids with 40 billion *H. pertussis* added per cc. (DPT). The second group was treated with aluminum hydroxide-adsorbed diphtheria and tetanus toxoid with 20 billion *H. pertussis* per cc. added (alhydrox). The schedule of injections was the same for both preparations: 0.5 cc. for the first injection, 1 cc. for the second and the third injection, with one month's interval between injections. There were very few severe local reactions in either group; no sterile abscess requiring drainage developed; in all cases erythema and induration usually developed at the site of injection within twelve to twenty-four hours and persisted for an average of forty-eight hours. The incidence and severity of fever and other general reactions were es-

sentially the same with both preparations; they decreased in each series with subsequent injections. The constitutional reactions were not severe. Titrations for diphtheria antitoxin in the serum one and six months after immunization showed protective titers of antitoxin in a high percentage of children in both groups; in the second group there was no drop in the number of children showing protective titers at the second test as compared with the first test, but there was a more rapid decrease in the number of children showing a high titer (1.0 unit per cc.) in this group than in the first group. Titrations of tetanus antitoxin in the serum one and six months after immunization showed that a high percentage of children in both groups had developed protective titers. In the second group (the alhydrox group), there was only a slight decrease in the percentage showing a titer of more than 1.0 unit per cc. (95 per cent to 92 per cent); but in the first group this percentage dropped from 94 to 77 per cent. Agglutination tests with *H. pertussis* showed that an agglutinin titer of 1:320 or more was obtained in a high percentage of cases in both groups (86 and 85 per cent), and that there was no significant decline in the agglutinin titer at the six months' test in either group. In each group some "poor immunizers" were found who failed to develop satisfactory protective titers against one or more of the antigens. On the basis of these findings the author concludes that alhydrox is a better immunizing agent against all three diseases than DRT vaccine; especially against pertussis in which it gives equally good results with half the dosage.

COMMENT

The test of inoculations against disease is time. Prevention of diphtheria is most satisfactory. Persons inoculated against tetanus show a lowering of the titer after two or three years. A stimulating dose should be given after any questionable accident. This dose quickly raises the titer to a protective level. At the present moment children who have been inoculated with DTP concentrated preparations have not shown the degree of protection against pertussis which they did with the original H. pertussis vaccine preparations. With the latter many children are protected for from four to six years and their immunity can be then restored by the use of a stimulating dose. Formerly a dose of from 90 to 120 billion bacteria was used. The aluminum hydroxide-adsorbed diphtheria and tetanus toxoid with 20 billion H. pertussis gives a total dosage of only 50 billion. Several years must elapse before definite results can be assured. All aluminum precipitated vaccines do produce sterile abscesses occasionally.

—H.E.U.

A Three Year Review of Statistics for Milk Substitutes in the Treatment of Infantile Eczema

L. Z. Wolpe *(Archives of Pediatrics,* 64:399, August 1947) reports a study of the results of treatment of infantile eczema with milk and milk substitutes in addition to the usual eczema therapy employed by the author. Of the many milk substitutes available, mostly prepared from soy bean, 9 were used in this study. It was found that clinical relief from eczema was obtained more rapidly in the infants receiving milk substitutes; this was especially noted in infants admitted to the hospital under ninety days of age, all of whom were private patients. But when the records for the infants under ninety days of age on admission and those over ninety days of age on admission are combined, calculation of the medium and mean number of days required for recovery shows that this period was definitely shorter for the infants fed on milk substitutes. While, during period of treatment, the total gain in weight was less for infants fed on milk substitutes than for those fed on milk, this is largely accounted for by the shorter time necessary for clinical relief in the milk substitute group. When the weight gain or loss was calculated for the two groups in an equivalent thirty day period, there was still a somewhat greater weight gain in the group fed on milk. When gain in length was calculated for the two groups for an equivalent thirty day period, the gain in length was somewhat greater in the group receiving milk substitutes. There was a marked variability in both weight and length gain in these two groups, and the differences observed cannot be regard-

ed as significant. The findings do show that the children given milk substitutes "did not suffer" from being deprived of milk during the period of treatment. On the basis of weight and length gained there does not seem to be a marked advantage of either the milk or the milk substitute dietary, but the latter gave clinical relief in infantile eczema in a definitely shorter period.

COMMENT

Soy bean preparations do offer a means of controlling infantile eczema, possibly due to the fact that eczema children do better on an alkaline diet. All infants are not allergic to cow's milk but certainly many are benefited by a change to goat's milk. Gain in weight is relatively unimportant in the treatment of eczema, for excessive obesity aggravates the condition. We have not yet determined the underlying cause of allergy. Until the cause is found the dietary procedure must be one of trial and error. —H.E.U.

Results of Treatment of Recurring Convulsive Attacks of Epilepsy

H. M. Keith *(American Journal of Diseases of Children,* 74:140, Aug. 1947) reports results of different forms of treatment for recurrent convulsive attacks of epilepsy in 147 children followed up for four to five years. In 37 cases the ketogenic diet alone was used; 10 of these patients remained free from attacks and 15 showed definite improvement. In 15 cases in which the ketogenic diet was combined with diphenylhydantoin sodium and/or phenobarbital, 4 patients remained well. In these cases the ketogenic diet was continued until the patient had been free from attacks for one year or more, then was gradually changed to a normal diet with a moderate limitation of carbohydrate. In the cases in which drugs were used with the diet, they were continued as a rule after the diet had been modified. In the remaining patients in this series phenobarbital, dyphenylhydantoin sodium or a combination of the two drugs without the ketogenic diet was employed. In these groups, approximately 12 per cent of patients have remained free from attacks while continuing to take the drug. In the groups in which the ketogenic diet was used with or without drugs, approximately 27 per cent of the patients have remained free from attacks. In another series of patients who were treated in childhood with the ketogenic diet with or without drugs, 190 have been followed up for fifteen to twenty-five years. Of these patients, 67, or 35.3 per cent, remained well while following this treatment and after for four to twenty-two years; 66 of these patients have been well for five years or more; and 33 for fifteen years or more. Twenty of these patients have married and have had 29 children; none of the children have had any type of convulsions. The author concludes that in the treatment of the convulsive attacks of epilepsy in children, the ketogenic diet, with or without anti-convulsant drugs, gives the best results.

COMMENT

This author has made a sound contribution to the treatment of epilepsy. With the advent of phenobarbital and later dilantin and more recently tridione many physicians have discarded the ketogenic diet which was most effective before we relied upon the mentioned drugs. We need more of such long term experiments such as described in this paper. To the young physician they are of great value. —H.E.U.

Oral Administration of Penicillin in Pediatrics

H. A. Reisman and A. A. Goldfarb *(American Journal of Diseases of Children,* 74:19, July 1947) report the use of oral penicillin in 22 children with acute respiratory tract infections at the Queens General Hospital. The preparation used contained the buffers aluminum hydroxide, calcium carbonate and magnesium oxide. In one group of patients the penicillin was given every two hours, in a second group every hour during the day and every two hours at night, and in a few cases every hour day and night. In all groups the penicillin was given regardless of the feeding schedule. In 10 of the 22 cases there was no response to the penicillin therapy, and in 12 cases, only fair improvement. In no case were the results as good as would be expected with sulfadiazine orally in similar cases. The blood levels of penicillin were low in all but 2 cases. Subse-

quently studies were made in another group of children, and in a control group of adults, in regard to the relation of food intake to the absorption of penicillin given orally. In these studies both the buffered tablets of penicillin and penicillin dissolved in isotonic solution sodum chlorde were used. This unbuffered liquid preparation was somewhat better absorbed than the buffered tablets. With both preparations the food-timing factor was important. If the penicillin was given just before or three hours after a standard meal, it was absorbed so that the penicillin in the blood reached therapeutically effective levels. If given at other times, penicillin was poorly absorbed, and the penicillin in the blood did not reach effective levels. Effective penicillin levels in the blood following oral administration persisted only one and a half to two hours. Reliable effective levels were obtained only with a dose of 100,000 Oxford units of penicillin given every three or four hours, about five times the average intramuscular dosage. On the basis of these findings, the authors conclude that in giving penicillin orally to children, this dosage (100,000 Oxford units every three or four hours) should be employed, and that the feeding schedule must be so arranged that the stomach is empty of food at the time the penicillin is given. Pure powdered penicillin in salt solution appears to be better for oral admnistration than buffered tablets.

COMMENT

It must be remembered that many of the upper respiratory infections in childhood are due to a virus rather than a bacterium. In such cases penicillin and the sulfa drugs prevent the complications due to the streptococcus and pneumococcus in the ears, lymphatic glands and lungs. With the use of penicillin and the sulfa drugs in respiratory disease pyelitis, so common in the past, seldom gives us trouble except in the cases due to malformation in the genitourinary tract.

The medical profession quickly discards remedies of proven value in favor of new remedies. Each new compound of the sulfonamides was taken up by physicians and in turn we have accepted penicillin for the treatment of most infections. In the ordinary type of infection of the respiratory tract the sulfa drugs are still preferred by many physicians in dosage commensurate with the presenting symptoms. Penicillin is expensive in the necessary doses for oral administration and is no more effective in the case ordinarily confronting the physician for treatment than the sulfa drugs, particularly sulfathiazole and sulfadiazine.

Any drug administered by mouth is more readily tolerated in the child when given after meals or with liquids between. Penicillin is more effective when administered by mouth when the stomach is empty, a disadvantage.

The extensive use of penicillin in general practice is produced by a demanding public which feels that it is receiving a panacea for all ills. When a child is sufficiently ill with a disease demanding the use of penicillin such a child should be treated in a hospital by the parenteral route and not by mouth. Sulfa drugs should not be relegated to the background.

—H. E. U.

Atomic Health Hazards

Formation of an Atomic Radiations Unit in the Chemical Section of the Industrial Hygiene Division, U. S. Public Health Service, was recently announced by Dr. J. G. Townsend, Chief of the Division. Duncan Holaday, Engineer (R), is in charge of the new Unit.

The new Unit will advise and assist State industrial hygiene units in detecting and evaluating health hazards produced by the use of radio-active isotopes and high energy machines such as x-ray machines and betatrons.

Radioactive isotopes are used primarily in scientific research. X-rays are increasingly used in industry for the inspection of finished products. Fluoroscopes are fairly commonly used in the citrus fruit, tobacco, and retail shoe industries.

It is believed that institutions and industries are handicapped in their desire to use radioactive isotopes and high energy machines by their lack of information about the safe handling of dangerous quantities of radioactive materials. The new Atomic Radiations Unit, working through industrial units in the State, will help institutions and industries evaluate their hazards and establish safe working conditions.

Medical BOOK NEWS

Edited by
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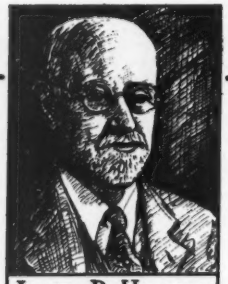
All books for review and communications concerning Book News should be addressed to the Editor of this department, 1313 Bedford Avenue, Brooklyn 16, N. Y. When books are sent to us with requests for review, selections for that purpose are promptly made.



JAMES B. HERRICK
1861~

Classical Quotations

• Nausea and vomiting, with belching of gas, are common. There may be tympany. Ashy countenance, cold sweat and feeble pulse complete the picture of collapse. The attention of the patient and the physician as well may, therefore, be strongly focused on the abdomen, and some serious abdominal accident be regarded as the cause of the sudden pain, nausea, collapse. The cardiac origin may be the more easily overlooked when there has been no previous typical angina, and when, as may happen, there is no arteriosclerosis manifested peripherally and no enlargement of the heart to be made out.

JAMES B. HERRICK

Clinical Features of Sudden Obstruction of the Coronary Arteries. *J.A.M.A. 59*:2015, 1912.

Seeing

The Psychology of Seeing. By Herman F. Brandt, Ph.D. New York, Philosophical Library, [c. 1945]. 8vo. 240 pages. Cloth, $3.75.

The purpose of this book is to explore the psychological aspects of visual perception as it pertains to learning in general and to commercial advertising in particular. It contains a detailed description of the method of recording objective observations by means of the eye camera and its relation to characteristic eye movement tendencies, and an eye evaluation of selective preference as observed by flash preference tests with regard to size, color, subject, etc.

C. MILTON MEEKS

War Medicine and Surgery

Out of Carnage. By Alexander R. Griffin. New York, Howell, Soskin, [c. 1945]. 8vo. 327 pages. Cloth, $3.00.

This book describes procedures which were responsible for the proud record of recovery of the sick and injured in World War II.

The descriptions are documentary rather than an appeal to the spectacular, and, therefore, of more value in sustaining the thesis that surgery and medicine advance with any war.

JOSEPH RAPHAEL

Chemistry in Medicine

Physiological Chemistry. By J. F. McClendon, Ph.D. 7th Edition. St. Louis, C. V. Mosby Co., [c. 1946]. 8vo. 463 pages, illustrated. Cloth, $4.25.

The general outline of the material seems to favor its adaptation to Clinical Medicine. The physician will find this book very interesting and adaptable as a reference in his daily practice.

Malaria

Practical Malariology, Prepared Under the Auspices of the Division of Medical Sciences of the National Research Council. By Paul F. Russell, M.D., Luther S. West, Ph.D. & Reginald D. Manwell, Sc.D. Philadelphia, W. B. Saunders Co., [c. 1946]. 8vo. 684 pages, illustrated. Cloth $8.00.

On the basis of an extensive military and civilian experience, the authors have provided an excellent practical guide to those techniques and procedures of the laboratory and field by which one evaluates and deals with the problems of control in a malarious area.

E. J. TIFFANY

For the Diabetic

A Primer for Diabetic Patients. By Russell M. Wilder, M.D. 8th Edition. Philadelphia, W. B. Saunders Co., [c. 1946]. 16mo. 192 pages, illustrated. Cloth, $1.75.

Doctor Wilder's manual for patients is now in its eighth edition. It is a compilation of much of the educational material which the Mayo Clinic staff uses in training diabetic patients in self care. It can be recommended by the physician to his diabetic patients.

WILLIAM S. COLLENS

Human Reproduction

A Comparative Study of Human Reproduction. By Clellan Stearns Ford. New Haven, Yale University Press, [c. 1945]. 8vo. 111 pages. Paper, $1.50. (Yale University Publications in Anthropology.)

This valuable amount of data is interesting and well presented, but of little value to the clinician. It is a well of information, and demonstrates the great amount of superstition surrounding human reproduction right down to our own time.

CHARLES H. LOUGHRAN

Chemotherapy

Advancing Fronts in Chemistry. A series of lectures sponsored by Wayne University under the direction of Neil E. Gordon, Ph.D. VOLUME II. "CHEMOTHERAPY." Edited by Wendell H. Powers. New York, Reinhold Publishing Corp., [c. 1946]. 8vo. 156 pages, illustrated. Cloth, $3.25.

This volume deals with Chemotherapy in various fields.

Each topic contains a historical survey with the latest developments in the field presented. The volume does not deal directly with clinical problems.

EUGENE R. MARZULLO

Pathology Handbook

Synopsis of Pathology. By W. A. D. Anderson, M.D. 2nd Edition. St. Louis, C. V. Mosby Co., [c. 1946]. 12mo. 741 pages, illustrated. Cloth, $6.50.

This is the second edition of a compact handbook of pathology, the main object of which is to supply the medical and dental student with a summary of general pathology, more complete than the usual elementary manuals but sufficiently concise in the supply of necessary detail.

THEO. J. CURPHEY

Vascular Disorders

Peripheral Vascular Diseases. By Edgar V. Allen, M.D., Nelson W. Barker, M.D., Edgar A. Hines, Jr., M.D., with associates in the Mayo Clinic and Mayo Foundation. Philadelphia, W. B. Saunders Co., [c. 1946]. 8vo. 871 pages, illustrated. Cloth, $10.00.

The authors leave several points open for debate among various vascular groups. Because of the many viewpoints presented, it is beyond the comprehension of the average general practitioner. However, it is a long awaited addition to the work being done on this subject by the Mayo Clinic group, and further advances our knowledge in the field of this newly developing specialty.

HUGH L. MURPHY

Children in Foster Homes

Adult Adjustment of Foster Children of Alcoholic and Psychotic Parentage and the Influence of the Foster Home. By Anne Roe, Ph.D. & Barbara Burks, Ph.D. with a chapter on SIBLING ADJUSTMENT in collaboration with Bela Mittelmann, M.D. New Haven, Quarterly Journal of Studies on Alcohol, [c. 1945]. 8vo. 164 pages. Paper, $2.00.

This report of an investigation concerning the influence of the foster home on children of normal, alcoholic and psychotic parentage discusses the challenge of heredity versus environment.

The authors believe that biological toughness, residence in a suitable home and acceptance as a respectable member of the community, favor adequate adjustment in the face of early unfavorable environment.

WILLIAM E. MCCULLOUGH

Returning Veterans' Problems

Sex Problems of the Returned Veteran. By Howard Kitching, M.D. New York, Emerson Books, [c. 1946]. 12mo. 124 pages. Cloth, $1.50.

This book treats the social and sexual readjustments of marriage of the returned veteran and his wife.

Honest, clear, and understandably written, this book will preserve its value as a handy council in temporary separation of marriages, beyond the original scope for the returning veteran.

WILLIAM E. MCCULLOUGH

Government Medicine

Medical Services by Government. Local, State, and Federal. By Bernard J. Stern, Ph.D. New York, Commonwealth Fund, [c. 1946]. 8vo. 208 pages. Cloth, $1.50.

To those interested in the history of medical services and medical care provided by governmental agencies, this monograph presents a summary of the whole field.

It should prove interesting reading to social welfare workers and to the physician whose activities are concerned with preventive medicine.

C. T. GRAHAM-ROGERS

Clinical Proctology

Essentials of Clinical Proctology. By Manuel G. Spiesman, M.D. New York, Grune & Stratton, [c. 1946]. 8vo. 238 pages, illustrated. Cloth, $4.00.

This short book covers the subject of Proctology thoroughly. At a glance, one can find a summary of what is known about each rectal condition.

LAURENCE G. BODKIN

Health for the Family

Health Care of the Family. By Ramona L. Todd, M.D., & Ruth R. Freeman, R.N. Philadelphia, W. B. Saunders Co., [c. 1946]. 12mo. 530 pages, illustrated. Cloth, $3.00.

This is an excellent textbook for study courses in nurses' training schools. Every phase of the care of the sick and of home and hospital nursing is covered.

It is recommended as a reference book for mothers at home.

ARTHUR D. JAQUES

Drugs

Repertorium Pharmaceutischer Spezialpraeparate, Sera Und Impfstoffe. Edited by Dr. Herbert Ludwig with the collaboration of Dr. L. V. Furlan & Dr. E. Loeliger. Basel, Switzerland, Verlagsgesellschaft Beobachter AG., [c. 1946]. 8vo. 1308 pages.

This book is a repertory of about 10,000 pharmaceutical specialties made in various European and American countries. Its value lies in the marked increase of international travel. When a traveller needs medical advice in a foreign country and tells the physician that previously he had been treated with a certain medicine, the physician will be able to find in this repertory the contents of such a specialty.

MAX G. BERLINER

Ion Transfer

Treatment by Ion Transfer (Iontophoresis). By D. Abramowitsch, M.D., & B. Neoussikine, M.D. New York, Grune & Stratton, [c. 1946]. 8vo. 186 pages. Cloth, $4.50.

This excellent book will do much to establish the more extensive use of ion transfer. It is most complete in its coverage of the subject, which is presented in a very interesting manner. It is highly recommended to student and practitioner.

JEROME WEISS

For the Cardiac Patient

What You Can Do for Angina Pectoris and Coronary Occlusion. By Peter J. Steincrohn, M.D. Garden City, N. Y., Doubleday & Co., [c. 1946]. 12mo. 154 pages. Cloth, $2.50.

Written with the direct intention of aiding and enlightening the sufferer of cardiac complaints, the book brilliantly accomplishes its purpose. The physician may safely recommend it to his patients.

HOWARD F. BEAKEY

Food Chemistry

Chemistry of Food and Nutrition. By Henry C. Sherman, Ph.D. 7th Edition. New York, Macmillan Co., [c. 1946]. 8vo. 675 pages, illustrated. Cloth, $3.75.

This ready reference gives a bird's-eye view of the chemistry of the food moieties, minerals, enzymes, vitamins, and correlates these facts with the physiology of the body economy. It is well supplied with bibliographic references.

GEORGE E. ANDERSON

Jews and Medicine

Jewish Luminaries in Medical History. By Harry Friedenwald, M.D. Also a CATALOGUE OF WORKS BEARING ON THE SUBJECT OF THE JEWS AND MEDICINE FROM THE PRIVATE LIBRARY OF HARRY FRIENDENWALD. Baltimore, Johns Hopkins Pr., [c. 1946]. 8vo. 197 pages, illustrated. Cloth, $3.00.

The author points out, though briefly, the type of manhood that constituted these early pioneers of Medicine. Persecution and enslavement failed to stop their unquenchable thirst for scientific investigation. The work should prove highly encouraging to the student of Medicine of today, when we have no restrictions or proscriptions.

HARRY APFEL